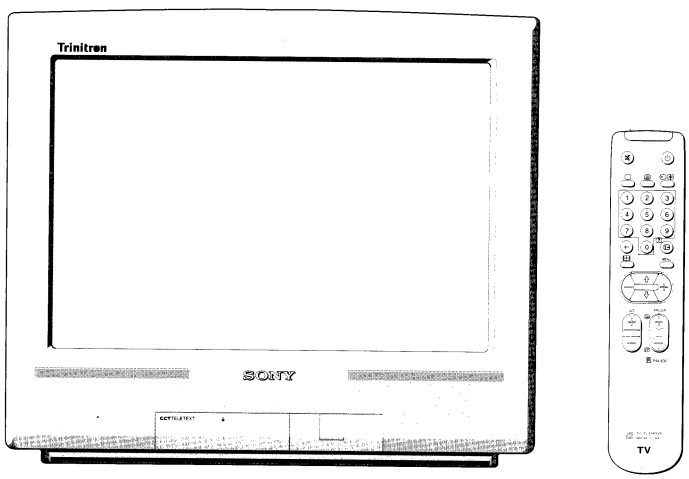
SERVICE MANUAL

BE-5 CHASSIS

MODEL	COMMANDER	DEST.	CHASSIS NO.
KV-25R1A	RM-836	Italian	SCC-K31D-A
KV-25R1D	RM-836	AEP	SCC-K32C-A
KV-25R1E	RM-836	Spanish	SCC-K30D-A
KV-25R1K	RM-836	OIRT	SCC-K35C-A
KV-25R1R	RM-836	OIRT	SCC-K35D-A



MICROFILM

TRINITRON® COLOR TV

SONY®

ITEM MODEL	Television System	Channel Coverage	Colour System
Italian	B/G/H	VHF: E2-E12 UHF: E21-E69 Hyper: S1-S41	PAL, SECAM NTSC3.58/4.43 (video input only)
AEP	B/G/H, D/K	B/G/H VHF: E2-E12 UHF: S1-S20 CABLE TV (1) : S1-S41 CABLE TV (2) : S01-S05, M1-M10, U1-U10 ITALIA VHF: A-H, H1, H2 D/K VHF: R01-R12 UHF: R21-R69 CABLE TV VHF: S1-S41, UHF: S01-S05	PAL, SECAM NTSC3.58/4.43 (video input only)
Spanish	B/G/H, D/K	PAL B/G/H VHF: E2-E12 UHF: E21-E69 CABLE TV (1) : S1-S41 CABLE TV (2) : S01-S05, M1-M10, U1-U10 ITALIA VHF: A-H, H1, H2 D/K VHF: R01-R12 UHF: R21-R69 CABLE TV VHF: S1-S41, UHF: S01-S05	PAL, SECAM NTSC3.58/4.43 (video input only)
OIRT	B/G, D/K	B/G/H VHF: E2-E12 UHF: S1-S20 CABLE TV (1) : S1-S41 CABLE TV (2) : S01-S05, M1-M10, U1-U10 ITALIA VHF: A-H, H1, H2 D/K VHF: R01-R12 UHF: R21-R69 CABLE TV VHF: S1-S41, UHF: S01-S05	PAL, SECAM NTSC3.58/4.43 (video input only)
OIRT	B/G, D/K	B/G/H VHF: E2-E12 UHF: S1-S20 CABLE TV (1) : S1-S41 CABLE TV (2) : S01-S05, M1-M10, U1-U10 ITALIA VHF: A-H, H1, H2 D/K VHF: R01-R12 UHF: R21-R69 CABLE TV VHF: S1-S41, UHF: S01-S05	PAL, SECAM NTSC3.58/4.43 (video input only)

MODEL	25R1A	25R1D	25R1E	25R1K	25R1R
Power Consumption	90W	90W	90W	90W	90W

SPECIFICATIONS

Picture Tube — Super Trinitron
Approx. 63 cm (25 inches)
(Approx. 59 cm picture measured diagonally) 100° deflection

Rear/Front Terminals

[REAR]

21-pin Euro connector (CENELEC standard)
- Including audio/video input, RGB input

[FRONT]

2 Video input - phono jack
Audio inputs - phono jacks
Headphone jack - stereo minijack

Sound output	14Wx2 (music power) 7Wx2 (RMS)
Dimensions	604x549x508 mm approx.
Weight	Approx. 31.0 kg
Supplied accessories	RM-836 Remote Commander (1) IEC designated batteries (2)
Other features	TELETEXT , Fasttext TOP text (KV-25R1A and 25R1D only) NICAM (KV-25R1E only)

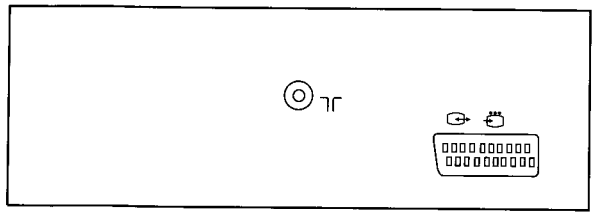
[RM-836]

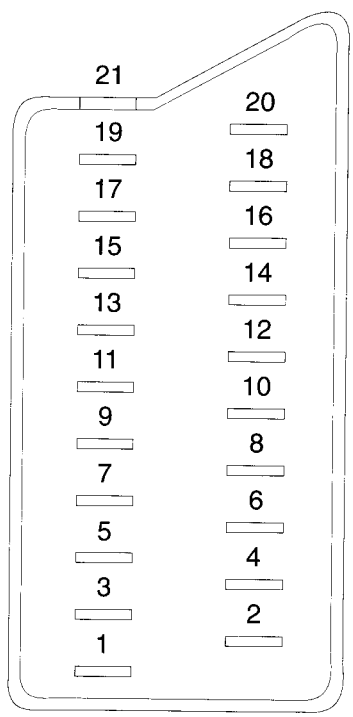
Remote control system	Infrared control
Power requirements	3V dc (2 batteries) R6 (size AA)
Dimensions	Approx. 210x45x24 mm (w/h/d)
Weight	Approx. 90g (Not including battery)

Design and specifications are subject to change without notice.

Item \ Model name	KV-25R1A	KV-25R1D	KV-25R1E	KV-25R1K	KV-25R1R
PIP	OFF	OFF	OFF	OFF	OFF
MPIP	OFF	OFF	OFF	OFF	OFF
Rotation Coil	OFF	OFF	OFF	OFF	OFF
VM Set (Velocity Modulation)	OFF	OFF	OFF	OFF	OFF
Scart 1	ON	ON	ON	ON	ON
Scart 2	OFF	OFF	OFF	OFF	OFF
Front in (3)	ON	ON	ON	ON	ON
AKB in 16:9 mode	ON	ON	ON	ON	ON
TXT	ON	ON	ON	ON	ON
FLOF	ON	ON	ON	ON	ON
TOP	ON	ON	ON	ON	ON
Norm B/G/H	ON	ON	ON	ON	ON
Norm I	OFF	OFF	OFF	OFF	OFF
Norm D/K	OFF	ON	OFF	ON	ON
Norm L	OFF	OFF	OFF	OFF	OFF
Language Preset	Italian	German	Spanish	OIRT	OIRT

21 pin connector (1)

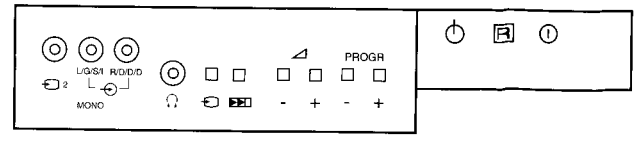




Pin No.	1	2	4	Signal	Signal Level
1	○	○	○	Audio output B (Right)	Standard level : 0.5V rms Output impedance : Less than 1k ohms*
2	○	○	○	Audio input B (Right)	Standard level : 0.5V rms Output impedance : More than 10k ohms*
3	○	○	○	Audio output A (Left)	Standard level : 0.5V rms Output impedance : Less than 1k ohm*
4	○	○	○	Ground (Audio)	
5	○	○	○	Ground (Blue)	
6	○	○	○	Audio input A (Left)	Standard level : 0.5V rms Output impedance : Less than 10k ohm*
7	○	●	●	Blue input	0.7 ± 3dB, 75 ohms, positive
8	○	○	○	Function select (AV control)	High state (9.5 - 12V) : Part mode Low state (0 - 2V) : TV mode Input impedance : More10k ohms Input capacitance : Less than 2nF
9	○	○	○	Ground (Green)	
10	○	○	○	Open	
11	○	●	●	Green	
12	○	○	○	Open	
13	○	○	○	Ground (Red)	
14	○	○	○	Ground (Blanking)	
15	○	—	—	Red input	0.7 ± 3dB, 75 ohms, positive
	—	○	○	(S signal) croma input	0.7 ± 3dB, 75 ohms, positive
16	○	●	●	Blanking input (Ys signal)	High state (1 - 3V) Low state (0 - 0.4V) Input impedance : 75 ohms
17	○	○	○	Ground (Video output)	
18	○	○	○	Ground (Video input)	
19	○	○	○	Video output	1V ± 3dB, 75ohms, positive sync : 0.3V (-3 + 10dB)
20	○	—	—	Video input	1V ± 3dB, 75ohms, positive sync : 0.3V (-3 + 10dB)
	—	○	○	Video input Y (S signal)	1V ± 3dB, 75ohms, positive sync : 0.3V (-3 + 10dB)
21	○	○	○	Common ground (plug, sheild)	

○ Connected ● Not Connected (Open) * at 20Hz - 20kHz

Pin No.	Signal	Signal Level
1	Ground	
2	Ground	
3	Y (S signal) input	1V ± 3dB 75 ohm, positive Sync. 0.3V -3 + 10dB
4	C (S signal) input	0.3V ± 3dB 75ohm, positive Sync.



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CAUTION

SHORT CIRCUIT THE ANODE OF THE PICTURE TUBE AND THE ANODE CAP TO THE METAL CHASSIS, CRT SHIELD, OR CARBON PAINTED ON THE CRT, AFTER REMOVING THE ANODE.

WARNING !!

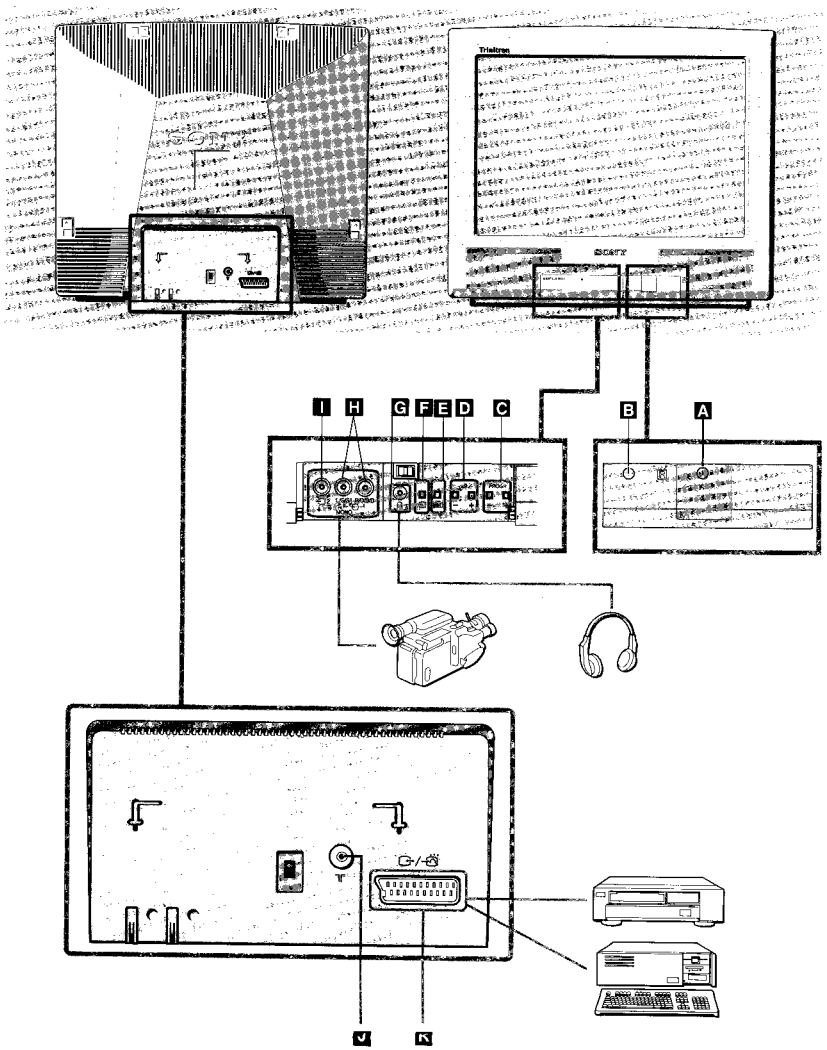
AN ISOLATION TRANSFORMER SHOULD BE USED DURING ANY SERVICE TO AVOID POSSIBLE SHOCK HAZARD, BECAUSE OF LIVE CHASSIS.
THE CHASSIS OF THIS RECEIVER IS DIRECTLY CONNECTED TO THE AC POWER LINE.

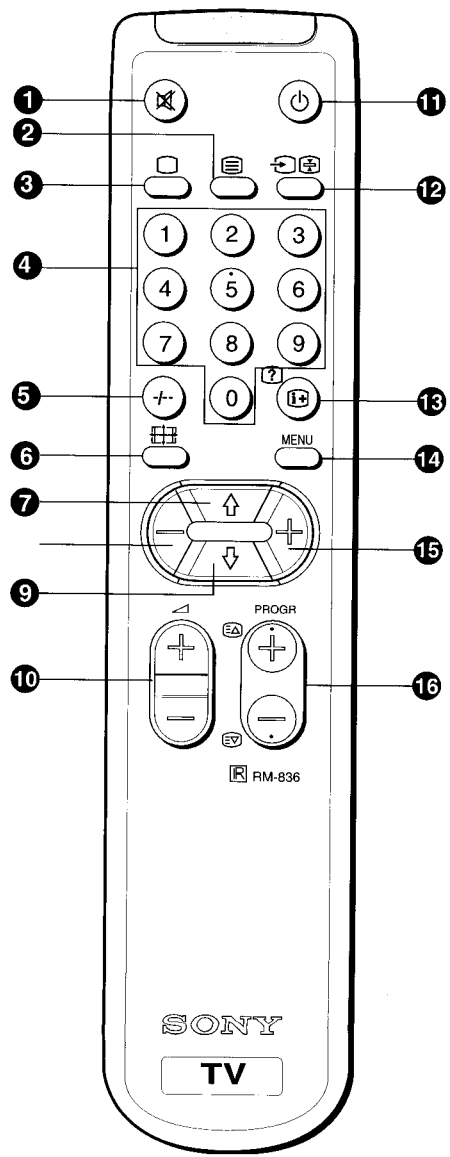
SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY SHADING AND MARK ⚠ ON THE SCHEMATIC DIAGRAMS, EXPLODED VIEWS AND, IN THE PARTS LIST ARE CRITICAL FOR SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

SECTION 1 GENERAL

The operating instructions mentioned here are partial abstracts from the Operating Instructions Manual. The page numbers of the Operating Instruction Manual remain as in the manual.





Please open the flaps at the front and at the back of the Instruction Manual for illustrations of the TV set and the Remote Commander. Letters in boxes refer to the buttons on the TV set, numbers in circles to the buttons on the Remote Commander.
Note: The illustrations in this instruction manual are based on the KV-25R1D model. You may find differences between these illustrations and your actual model.

Step 1

Connecting the Aerial

(If you connect a VCR, skip to step 2).
Connect an external aerial to the socket) J.

Step 2

Connecting a VCR

We recommend that you tune in the VCR signal to programme number "0".
For details see "Presetting Channels Manually" on page 33.

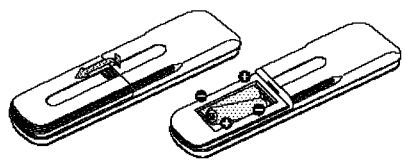
Step 3

Connecting the Mains Plug

Connect the mains plug of the TV set to the electrical outlet (220-240 V AC, 50 Hz).

Step 4

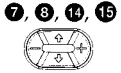
Inserting the Batteries into the Remote Commander



Always remember to dispose of used batteries in an environmental friendly way.

Step 5

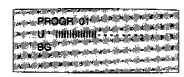
Remote Commander Overview

Refer to Symbol	Effect	Refer to Page
❶ 🔇	Sound on/off button	30
❷ 📺	Teletext on button	37
❸ ▭	TV button / TV power on Teletext off button	30 37
❹ 1... 9, 0	Number buttons	30
❺ -/- -	Double digit entering button	30
❻ ⊞	Screen Format	30
❼, ❽, ❿, ⓯ 	MENU: Cursor buttons to operate Menu functions TELETEXT: Fastext / TOP Text buttons	 31 37
❾ ◿ +/-	Volume control	30
❿ ⏻	Standby button	30
⓫ ⏎ ⊟	Input mode button Teletext: Freezing the subpage	38 37
⓬ ⓘ ?	On screen display button Teletext: reveal button	30 37
⓭ MENU	Menu on/off button	31
⓰ PROGR +/- ▲, ▼	Programme buttons Teletext: Page up/down buttons	30 37

Step 6

Presetting Channels Automatically

TV searches for all available channels.
If manual tuning is preferred see Menu option - Presetting Channels Manually.



1 Depress power switch ⏻ A on TV set.

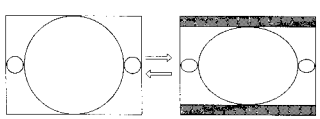
2 Press and hold ⏭ E on TV set for 2 seconds.
Auto tuning starts and screen shows.

- When Auto tuning stops, the programme position 1 is displayed.
- Programme names are automatically taken from Teletext if available. With that function, you can easily identify which channel you are watching.

TV Operation

This section explains functions used whilst watching TV. Most operations are carried out using the Remote Commander (numbers in circles). All basic functions are also available on the TV set (letters in boxes).

To	Press
Switch on	• ⏻ A on TV
Switch off temporarily	• ⏻ 10 *TV is now in standby mode, ⏻ indicator B on TV lights.*
Switch on again	• 3, PROGR +/- 16 C or any number button 4
Switch off completely	• ⏻ A on TV *To save energy we recommend switching off completely when TV is not in use.*
Select programmes	• PROGR +/- 16 C or number buttons 4 *For double digit numbers press -/-- 5 then the number e.g. For 23, press -/-- 5 then 2 and 3.*
Display the programme number	• 12 *Press again to make programme number disappear.*
Adjust the volume	• +/- 9 D
Mute the sound	• 1 *Press again to restore sound.*
View video input	• 11 F *Press again to return to TV programme.*
View programmes in 16:9 mode	• 6 *Press again to return to 4:3 mode.*



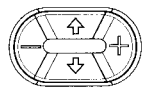
Use the following buttons on Remote Commander to control Menu screen.

1 Press MENU 13 to switch the Menu Screen on/off.

2 Use the coloured buttons as follows:

Green 7
Scroll up

Red – 8
decrease/select



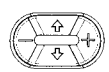
Yellow + 14
increase/confirm(OK)

Blue 15
Scroll down

Adjusting the Picture and Sound

1 Press MENU 13.

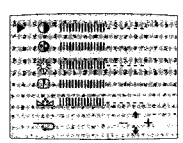
2 Press green 7 or blue 15 to select ■ (Picture) or ♪ (Sound) and press yellow 14 (OK) to confirm.



3 Press green 7 or blue 15 to select the item you wish to change.

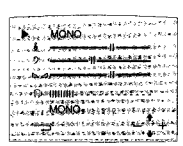
PICTURE CONTROL

Symbol	Item	-	Effect	+
◑	• Picture	Less		More
◕	• Colour	Less		More
☼	• Brightness	Darker		Brighter
◫	• Sharpness	Softer		Sharper
◪	• Hue control (only for NTSC video signals)	Reddish		Greenish



SOUND CONTROL

Symbol	Item	-	Effect	+
	• MONO/STEREO	A: channel 1 Stereo/Mono		B: channel 2
𝄞	• Treble	Less		More
𝄢	• Bass	Less		More
◣◢	• Balance	More left		More Right
∩	• Headphones:			
	Volume	Less		More
	MONO/STEREO	A: channel 1 Stereo/Mono		B: channel 2



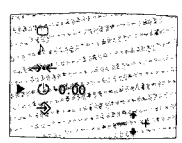
4 Press red ❽ or yellow ⓮ to change levels.

5 Press MENU ⓭ to return to normal TV screen.

- To reset to factory preset picture levels, press green ❼ or blue ⓯ to select →•← and press yellow (OK) ⓮.
- To return to the Main menu, select ⮌ and press yellow.
- **When receiving a STEREO or Bilingual programme:**
  1. Stereo/Monoaural: on the screen appears ▷◁ or ▷◁.
  2. Bilingual: on the screen appears ▷A◁ or ▷B◁.

Using the Sleep Timer

The TV may be set to switch to the standby mode automatically after a length of time chosen by you. You may set the time in 30 minutes steps up to 4 hours.



1 Press MENU ⓭.

2 Press green ❼ or blue ⓯ to select ⏻

3 Press red ❽ or yellow ⓮ to set time delay.
0.00 (OFF) 0.30 1.00 1.30 .... 4.00

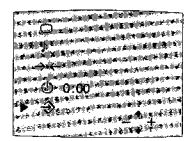
4 Press MENU ⓭ to return to normal TV screen.
When watching TV, press ⓓ ⓬ to display time remaining.

Presetting Channels Manually

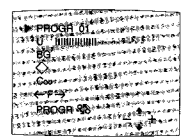
Up to 60 programme positions are available for presetting channels.

1 Press MENU ⓭.

2 Press green ❼ or blue ⓯ to select ⇳ and press yellow (OK) ⓮.



3 Select programme number using PROGR +/- ⓰ C or the number buttons ❹.



4 Press green ❼ or blue ⓯ to select tuning bar (IIIIII...) and press red ❽ or yellow ⓮ to start channel search. When a channel is found the tuning bar stops moving and you see the picture.

5 If you want to store, press green ❼ or blue ⓯ to select ◇ and press yellow (OK) ⓮. If you don't want to store, press red ❽ or yellow ⓮ to continue search.

6 Repeat steps 3 to 5 for all other channels.

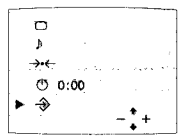
7 Press MENU ⓭ to return to normal TV screen.

Skipping Programme Positions

You can skip unused programme positions when selecting channels with the PROGR +/- ⑯C buttons. You can still select them, however, using the number buttons ④.

1 Press MENU ⑬.

2 Press green ⑨ or blue ⑮ to select ⇨ and press yellow ⑭.



3 Select programme number you want to skip using PROGR +/- ⑯C or number buttons ④.

4 Press green ⑦ or blue ⑮ to select Coo and press yellow (OK) ⑭.

5 Press green ⑦ or blue ⑮ to select ◇ and press yellow (OK) ⑭ to store.

6 Repeat steps 3 to 5 for other unused programme positions.

7 Press MENU ⑬ to return to normal TV screen.

Fine-Tuning Channels

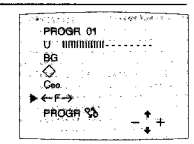
You can fine tune a stored channel.

1 Select the channel you wish to fine tune.

2 Press MENU ⑬.

3 Press green ⑦ or blue ⑮ button to select ⇨ and press yellow (OK) ⑭.

4 Press green ⑦ or blue ⑮ to select ←F→ and use red ⑧ or yellow ⑭ to adjust tuning.



5 Press green ⑦ or blue ⑮ to select ◇ and press yellow (OK) ⑭ to store.

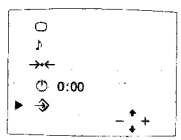
6 Press MENU ⑬ to return to normal TV screen.

Exchanging Programme Positions

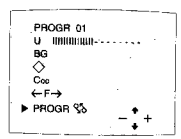
After tuning you may wish to rearrange the programme positions.

1 Press MENU ⓭.

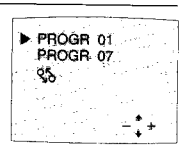
2 Press green ❼ or blue ⓯ button to select ⇨ and press yellow (OK) ⓮.



3 Press green ❼ or blue ⓯ to select PROGR ⇅ and press yellow (OK) ⓮.



4 Press red ❽ or yellow ⓮ to select the first programme position.



5 Press the blue ⓯ button.

6 Press red ❽ or yellow ⓮ to select the second programme position.

7 Press blue ⓯ to select ⇅ and press yellow (OK) ⓮ to exchange.

8 Repeat steps 4 to 7 for other programme positions.

9 Press MENU ⓭ to return to normal TV screen.

Viewing Teletext

Teletext is an information service broadcast by TV stations.

1 Select the channel which carries the teletext service you wish to receive.

2 Press ▤ ❷ to switch on teletext.

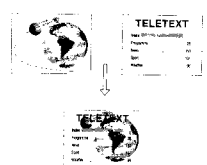
3 Input three digits for the page number using the programme number buttons ❹ or ▤▲/▤▼ ⓰ (next or previous page).

4 Press ▢ ❸ to switch off teletext.

Teletext errors may occur if the broadcasting signals are weak.

Using Other Teletext Functions

Superimposing teletext on the TV



Press ▤ ❷ once in teletext mode or twice in TV mode to superimpose teletext on the TV screen.
Press ▤ ❷ again to cancel superimposing.

Freezing a teletext subpage

Press ▤ ⓫ (HOLD) to freeze the subpage. Freezing the page prevents the information that is displayed from being updated.
Press ▤ ⓫ to cancel HOLD and allow update to continue.

Revealing concealed information (eg: answers to a quiz).

Press ? ⓬ to reveal information.
Press again to conceal the information.

Using colour buttons to access pages (Fastext)

When the colour coded menu appears at the bottom of a page, press the colour button (green, red, yellow or blue) ❼❽⓮⓯ to access the corresponding page.

Connecting Optional Equipment

There is a wide range of optional equipment you can connect to your TV. Refer to the illustrations on the back flap page of this manual.

Symbol	Acceptable input signals
⇥/⇥2 H I	• Normal audio/video through the phono jacks.
⇥/⇥ K	• Normal audio/video and RGB through Euro AV connector.

Selecting the Input

Press ⇥ ⓫ F repeatedly to select the desired video source.
Press ▢ ❸ to return to normal TV operation.

Connecting Headphones

Plug in the headphones to the ∩ G socket on the front of the TV set.

Troubleshooting

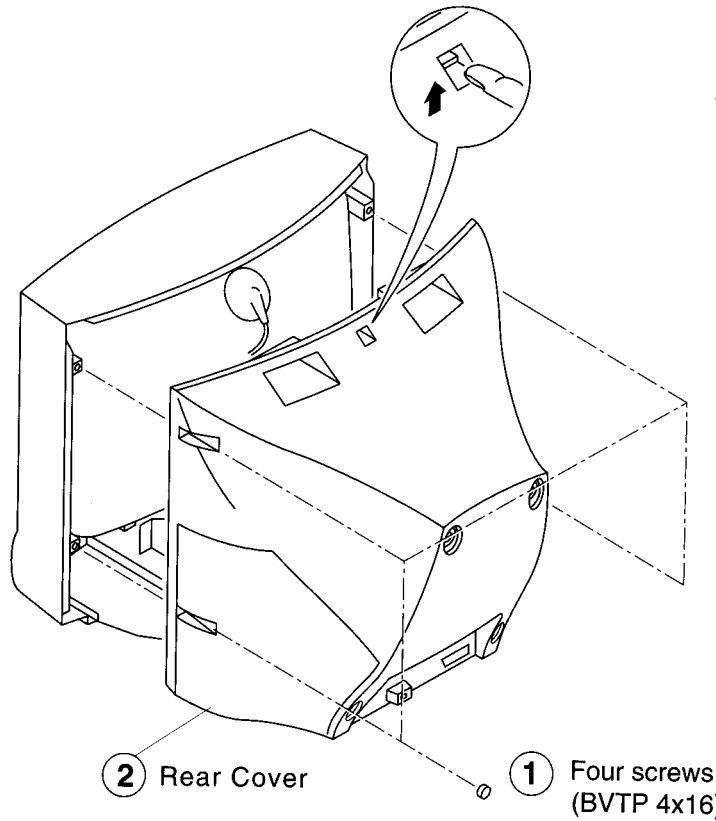
Here are some simple solutions to the problems which affect the picture and sound.

Problem	Solution
No picture, screen is dark, no sound	• Plug the TV in. • Press ⏻ A on the TV. • If ⏻ indicator B is on press ▢ ❸ or the programme number ❹ on the remote commander. • Check the aerial connection. • Check that the video source is on. • Turn the TV off for 3 or 4 seconds and then turn it on again using ⏻ A.
Poor or no picture (screen is dark, sound is good)	• Press MENU ⓭ and adjust brightness picture and colour balance level.
Picture moved to the left when watching a RGB video source.	• Press ⇥ ⓫ repeatedly to select ⇥.
Good picture, no sound	• Adjust the volume +/– ❾ D. • Disconnect any headphones. • If 🔇 is displayed on the screen, press 🔇 ❶.
No colour on colour programmes	• Press MENU ⓭ and adjust colour balance. • Press MENU ⓭ and reset to factory settings.
Distorted picture when changing programmes or selecting teletext	• Turn off the equipment connected to the 21-pin connector K.
Remote commander does not function	• Replace the batteries.

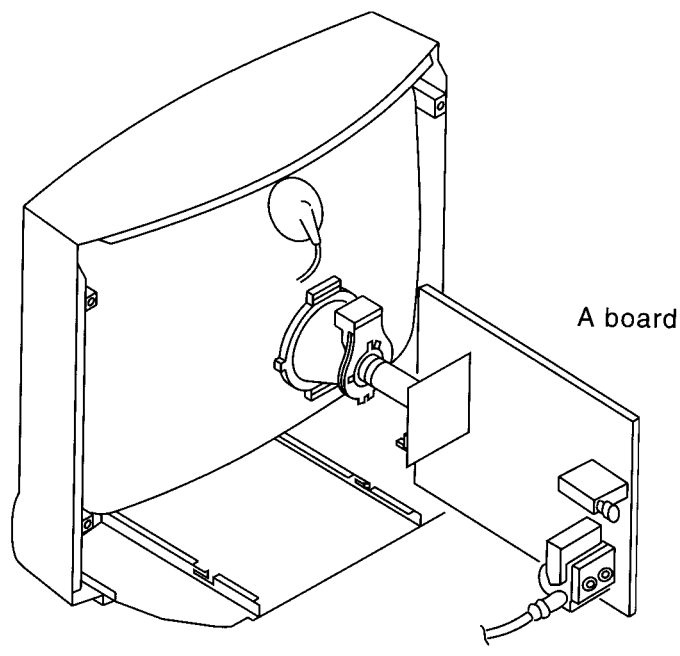
• If you continue to have these problems, have your TV serviced by qualified personnel.
• NEVER open the casing yourself.

SECTION 2
DISASSEMBLY

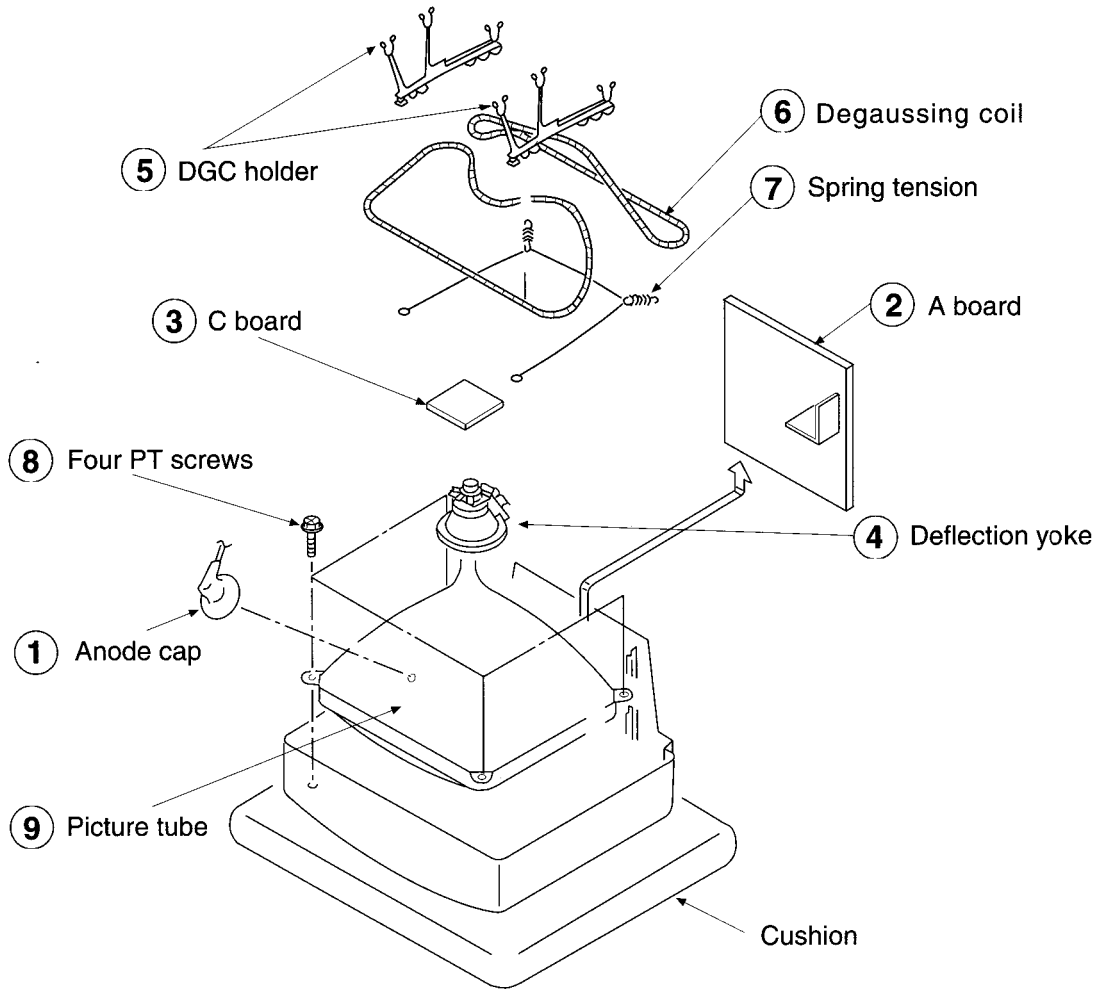
2-1. REAR COVER REMOVAL



2-2. SERVICE POSITION



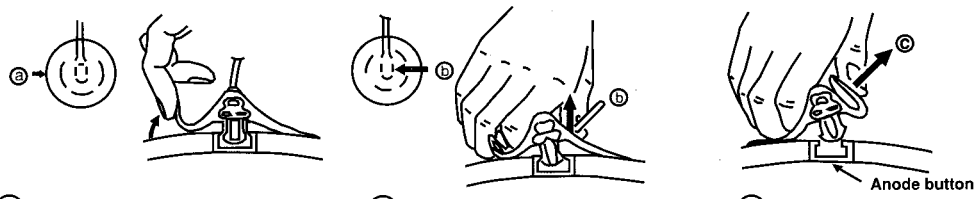
2-3. PICTURE TUBE REMOVAL



• REMOVAL OF ANODE-CAP

Note: Short circuit the anode of the picture tube and the anode cap to the metal chassis, CRT shield or carbon paint on the CRT, after removing the anode.

* **REMOVING PROCEDURES.**



① Turn up one side of the rubber cap in the direction indicated by the arrow ⓐ

② Using a thumb pull up the rubber cap firmly in the direction indicated by the arrow ⓑ

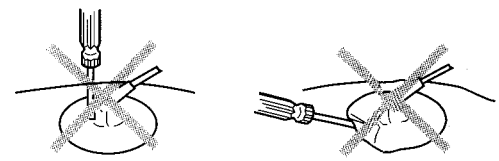
③ When one side of the rubber cap is separated from the anode button, the anode-cap can be removed by turning up the rubber cap and pulling it up in the direction of the arrow ⓒ

• HOW TO HANDLE AN ANODE-CAP

① Don't damage the surface of anode-cap with sharp shaped material !

② Don't press the rubber hardly not to hurt inside of anode-caps !
A metal fitting called as shatter-hook terminal is built into the rubber.

③ Don't turn the foot of rubber over hardly !
The shatter-hook terminal will stick out or damage the rubber.



SECTION 3
SET-UP ADJUSTMENTS

- The following adjustments should be made when a complete realignment is required or a new picture tube is installed.
- These adjustments should be performed with the rated power supply voltage, unless otherwise noted.

The Contrast and Brightness controls should be set as follows unless otherwise noted:

CONTRAST control 80%
(or Normal by commander)
BRIGHTNESS control 50%

Perform the adjustments in the following order:
1. Beam Landing
2. Convergence
3. Screen (G2), Drive, White Balance, Sub Colour and Sub Brightness.
4. Focus

Note: Test Equipment Required.
1. Colour bar/Pattern Generator
2. Degausser
3. DC Power Supply
4. Digital multimeter
5. Oscilloscope

Preparation:
- In order to reduce the influence of external magnetic forces on the picture tube, face the TV set in an easterly or westerly direction.
- Turn the power switch for the unit ON and erase the magnetic force using a degausser.

3-1. BEAM LANDING

Demagnetize with a degausser.
1. Input an all white raster signal from the pattern generator.
   CONTRAST } normal
   BRIGHTNESS }
2. Switch the raster signal of the pattern generator to Red.
3. Move the deflection yoke backward, and adjust with the purity control so that Red is at the centre and the Blue and Green are evenly spaced at the sides. see (Fig. 3-1 - 3-3)
4. Move the deflection yoke forward, and adjust so that the entire screen becomes Red. (Fig. 3-1)
5. Switch the raster signal to Blue and then Green to confirm the condition.
6. When the position of the deflection yoke has been determined, tighten it with the deflection yoke mounting screw.
7. When the landing at the corners is not correct, adjust by using disk magnets. (Fig. 3-4)

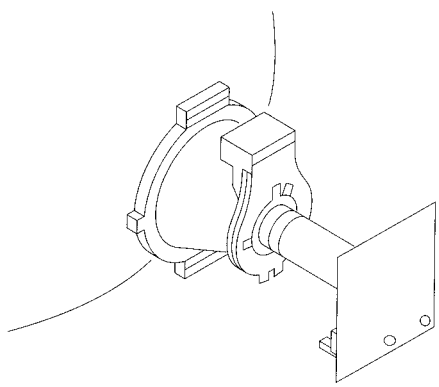


Fig. 3-1

Fig. 3-2

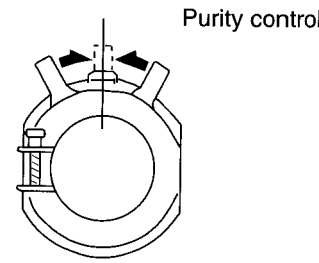


Fig. 3-3

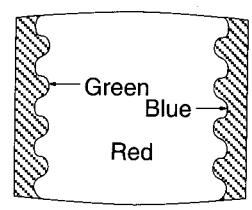
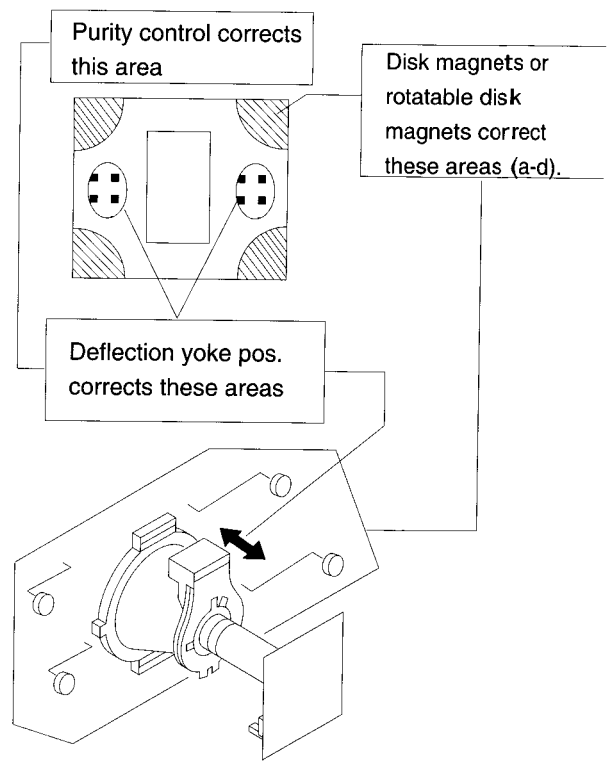


Fig. 3-4

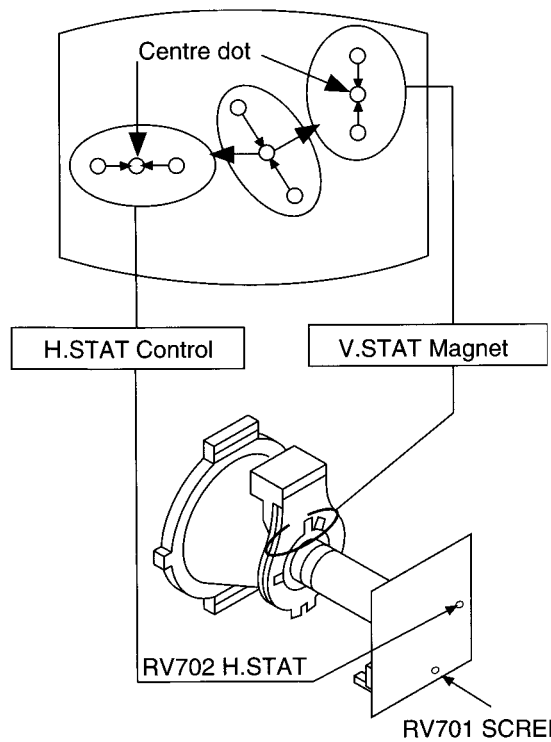

Purity control corrects this area
Disk magnets or rotatable disk magnets correct these areas (a-d).
Deflection yoke pos. corrects these areas

3-2. CONVERGENCE

Preparation:

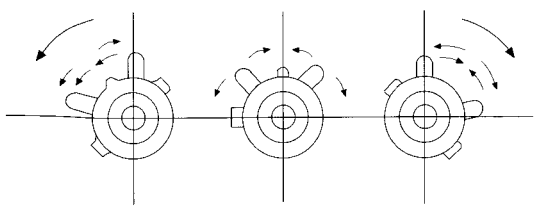
- Before starting, perform FOCUS, H.SIZE, and V.SIZE adjustments.
- Set the BRIGHTNESS control to minimum.
- Input a dot pattern from the pattern generator.

(1) Horizontal and Vertical Static Convergence

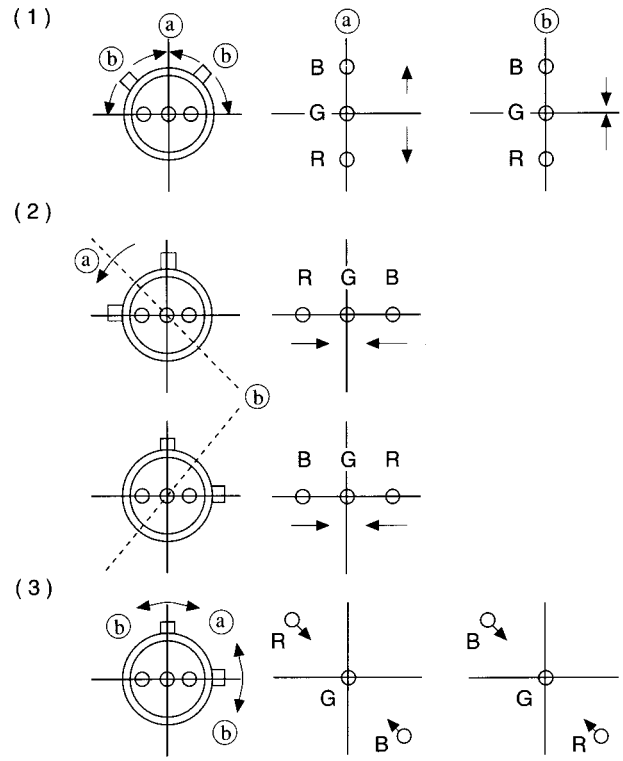


1. Adjust the H.STAT control to converge the Red, Green and Blue dots at the centre of the screen. (Horizontal movement)
2. Adjust the V.STAT magnet to converge the Red, Green and Blue dots at the centre of the screen. (Vertical movement)

- If the horizontal dots cannot coincide with variable range of the H.STAT convergence, adjust together with the V.STAT convergence while tracking.
  (Adjust the convergence by tilting the V.STAT convergence or by opening or closing the V.STAT convergence.)



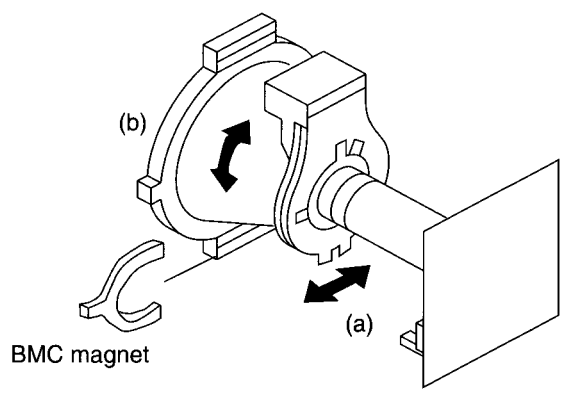
3. When the V.STAT magnet is moved in the direction of the (a) and (b) arrows, the Red, Green and Blue dots move as shown below.



If the Red and Blue dots do not converge with the Green dots, perform the following steps.

1. Move the BMC magnet (a) to correct for insufficient H.static convergence.
2. Rotate the BMC magnet (b) to correct for insufficient V.static convergence.

In either case, repeat the Beam Landing Adjustment.

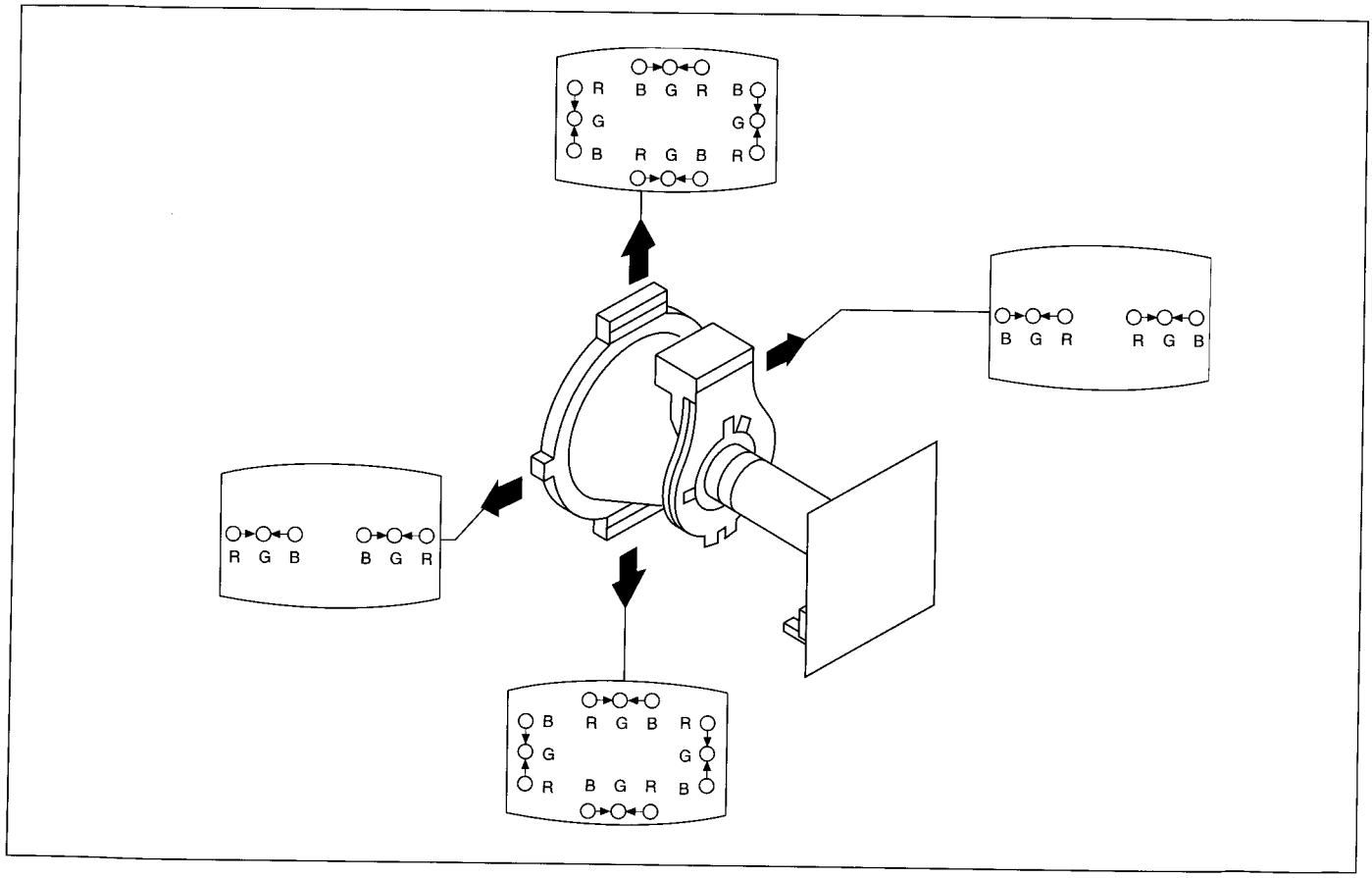


(2) Dynamic Convergence Adjustment

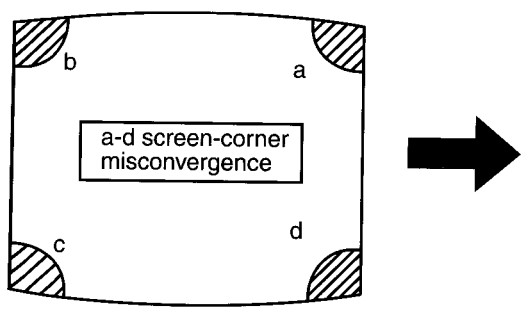
Preparation:

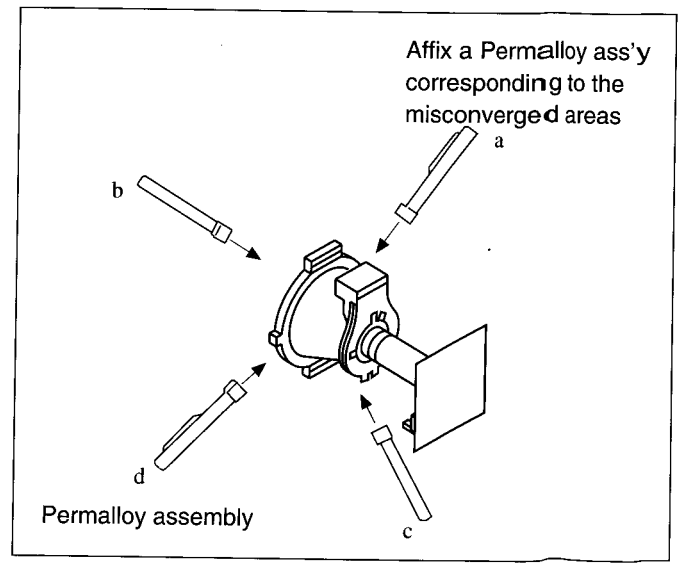
- Before starting, perform the Horizontal and Vertical static convergence adjustment.

1. Slightly loosen the deflection yoke screw.
2. Remove the deflection yoke spacers.
3. Move the deflection yoke for best convergence as shown below.
4. Tighten the deflection yoke screw.
5. Install the deflection yoke spacers.

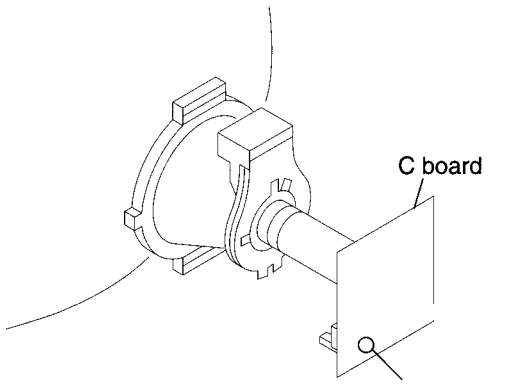


(3) Screen-corner Convergence.





3-3. SCREEN (G2), DRIVE, WHITE BALANCE, SUB COLOUR and SUB BRIGHTNESS.



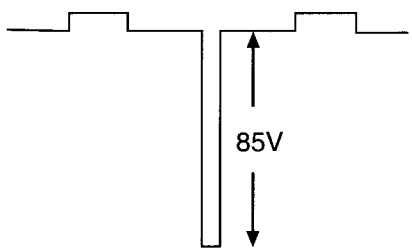
RV701 SCREEN (G2)

Screen (G2) setting

1. Input a 0 IRE (Black Level) signal from the pattern generator.
2. Enter into the Service Mode "Test""Test" and 38.
3. Adjust the RV701 until the Down arrow is displayed.
4. Adjust the RV701 until the Down arrow just disappears.
5. Press the TV Button on the Remote Commander to store the data.

Drive Level

1. Input a Video signal containing a small area of 100% white on a black background.
2. Connect an oscilloscope to Pin (10) of J701 (R OUT) on the C Board.
3. Set the Picture to maximum using "Test""Test" and 01.
4. Enter into the Service mode (Adjust Menu).
5. Using the Blue and Green buttons select "RED HWB".
6. Using the Red and Yellow buttons on the Remote Commander adjust until the oscilloscope waveform has an amplitude of 85V.

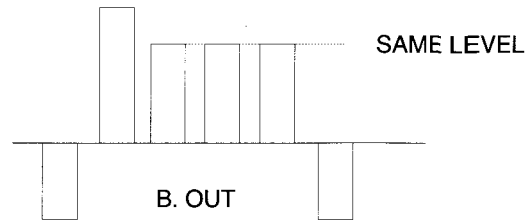


White Balance Adjustment

1. Input an all white pattern from the pattern generator.
2. Adjust the Colour and Brightness controls to the standard level.
3. Enter into the Service Mode.
4. Adjust the Green HWB and Blue HWB so that the White Balance becomes optimum.

Sub Colour Adjustment

1. Input a PAL colour bar pattern from the pattern generator.
2. Connect an oscilloscope to Pin (8) of J701 (B OUT) on the C Board.
3. Enter into the Service Mode "Test""Test" and 22.
4. Using the Red and Yellow buttons on the Remote Commander adjust until the oscilloscope waveform becomes as follows :



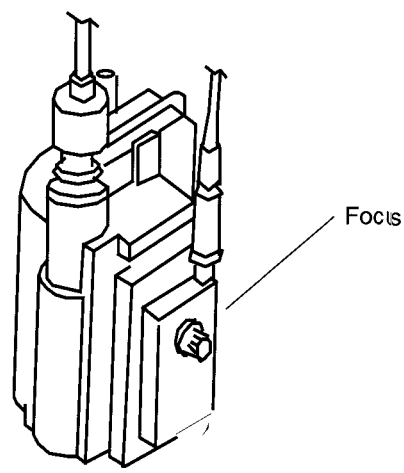
Note : If the TV is able to receive PAL and SECAM transmissions, repeat the above procedure using a Secam colour bar signal.

Sub Brightness Adjustment

1. Input a Philips pattern from the pattern generator.
2. Enter into the Service Mode "Test""Test" and 23.
3. Using the Red and Yellow buttons on the Remote Commander adjust until the 0 IRE of the grey scale and the cut off are only slightly visible on the screen.

3-4. FOCUS

1. Receive a television broadcast.
2. Normalize the picture setting.
3. Adjust the focus control on the flyback transformer to focus the screen centre area properly.
   Bring only the centre area of the screen into focus, the magenta-ring appears on the screen. In this case, adjust the focus to optimize the screen uniformly.



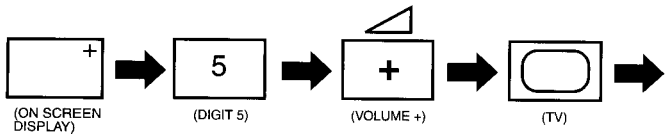
SECTION 4
CIRCUIT ADJUSTMENTS

4-1. ELECTRICAL ADJUSTMENTS

Service adjustment to this model can be performed with the supplied Remote Control Commander RM-836.

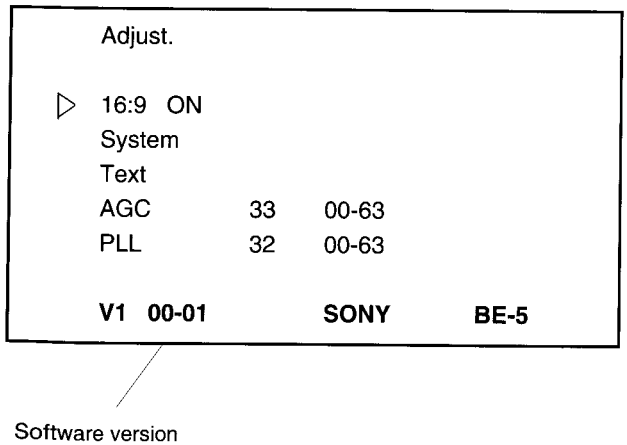
HOW TO ENTER INTO SERVICE MODE

1. Turn on the main power of the set and enter into stand-by mode.
2. Press the following sequence of buttons on the Remote Control Commander.



"TT-- " will appear in the top right corner of the screen Other status information will also be displayed.

3. Press the MENU button on the Remote Commander to obtain the menu on the screen.



4. Press the Blue (Next) or Green (previous) buttons to select the adjustment item from the table.
5. Press the Yellow (+) or Red (-) buttons to change the data as required.
6. Turn off the power to quit the service mode when adjustments are completed.

Range of adjustments available from the on screen menu system.

Adjustment	Set	Range
V size	21	0 - 63
V breth	32	0 - 63
Pin amp	12	0 - 63
Para. tilt	43	0 - 63
V linear	42	0 - 63
Corner corr	05	0 - 63
H size	34	0 - 63
V pos	00	0 - 63
H phase	42	0 - 63
Blue	26	0 - 63
Green	32	0 - 63
Red	42	0 - 63
HV blk 1	00	0 - 63
HV blk 2	00	0 - 63
V cent	06	0 - 63
Zwei max	36	0 - 63
zwei min	18	0 - 63

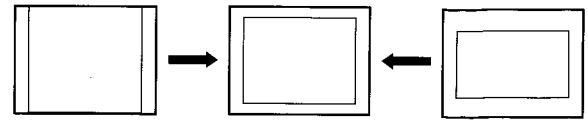
DEFLECTION SYSTEM ADJUSTMENT

1. Enter into the service mode.
2. Using the Blue or Green buttons select the Adjust item.
3. Press the Yellow button to enter the adjustment submenu.
4. Select and adjust each item in order to obtain the optimum image.

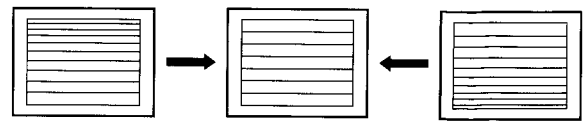
See Note on page 23

Adjustment	Set	Range
V size	21	0 - 63
V breth	32	0 - 63
Pin amp	12	0 - 63
Para. tilt	43	0 - 63
V linear	42	0 - 63
Corner corr	05	0 - 63
H size	34	0 - 63
V pos	00	0 - 63
H phase	42	0 - 63
Blue	26	0 - 63
Green	32	0 - 63
Red	42	0 - 63
HV blk 1	00	0 - 63
HV blk 2	00	0 - 63
V cent	06	0 - 63
Zwei max	36	0 - 63
zwei min	18	0 - 63

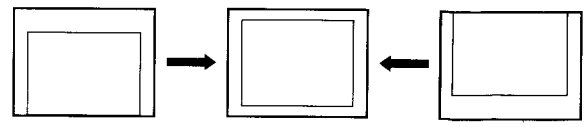
VERT, AMPL



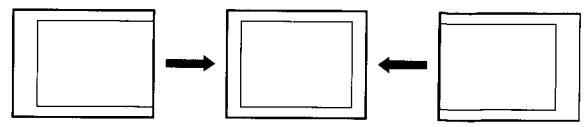
V, LINEAR



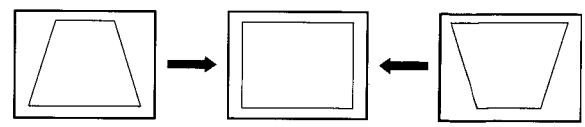
V, CENTRE



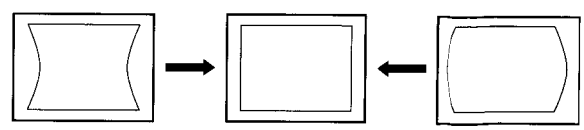
H, CENTRE



PAR TILT

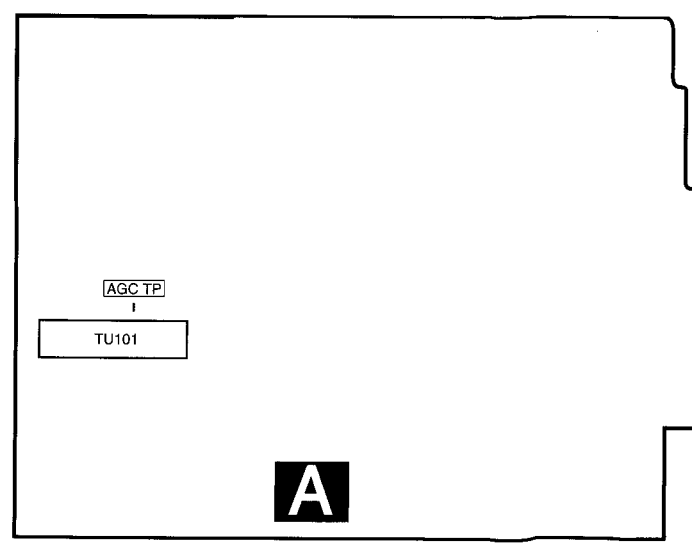


PAR AMP



AGC ADJUSTMENT

1. Receive a signal of 63dBuV / 75 ohm terminated via the tuner socket.
2. Measure the voltage at AGC TP.
3. Adjust TU101 RV to obtain a voltage of 3.0 ± 0.3V.



- A Board Component Side -

4-2. TEST MODE 2:

TT -- Mode is available by pressing the Test button twice, O.S.D 'TT --' appears. The functions described below are available by pressing two digits. To release the 'TT --' mode, press 0 twice, press 'TEST' , press 'TV' or switch the TV into Stand-by mode.

00	Switch 'TT—' Mode off.
01	Set picture level to maximum.
02	Set picture level to minimum.
03	Set volume to 35%.
04	Set volume to 50%.
05	Set volume to 65%.
06	Set volume to 80%.
07	Ageing condition (picture max., brightness max.).
08	Shipping condition (Analog values are RESET to factory setting, Prog 1 is selected, TT—mode switched off, Vol = 35%).
09	Dummy.
10	No function.
11	Dummy
12	Dummy.
13	Dummy.
14	Dummy.
15	Read factory setting from ROM to NVM - Reads Volume, Brightness, Picture, Hue, Sharpness and Colour values from ROM to the actual used values (Last Power Memory).
16	Save actual used values as reset values.
17	Enable / Disable Sharpness Operation.
18	Dummy.
19	RGB priority.
20	No function.
21	No function.
22	Sub Colour (Pal / Secam Different Stores)
23	Sub Brightness.
24	RGB priority on.

25	Destination Systems DKE.
26	Destination Systems I/U.
27	Destination System I/I'.
28	Destination BG only.
29	Dummy.
30-31	No function.
32	Picture level to 50%
33-35	No function.
36	Audio mute ON.
37	OSD off.
38	Enter G2 adjustment mode.
39	Sub-brightness
40	No function.
41	Re-initialise NVM.
42	Dummy.
43	Re-initialise Geometry settings.
44-47	Dummy
48	Set NVM testbyte to 44h in NVM.
49	Erase NVM testbyte
50	No function.
51	Toggle 60/100 programs.

Note : For Test Modes 41 - 51, it is necessary to ensure that the TV is set to Prog 59.

4-3. BE-5 SELF DIAGNOSTIC SOFTWARE

The identification of errors within the BE-5 chassis is triggered in 1 of 2 ways :- 1: Bus busy or 2: Device failure to respond to I^2C. In the event of one of these situations arising the software will first try to release the Bus if busy (Failure to do so will report with a continuous flashing LED) and then communicate with each relevant device in turn to establish if a device is faulty. If a device is found to be faulty the relevant device number will be displayed through the LED by a Series of flashes which must be counted (See Table 1), Non fatal errors are reported with this method.

If a fatal error is found, the set will simply stay in whichever state it was when the error occurred, but if a non fatal error occurs the set will try to continue to operate.
To check error code it is necessary to use TV error display part number S-188-900-10.

Table 1

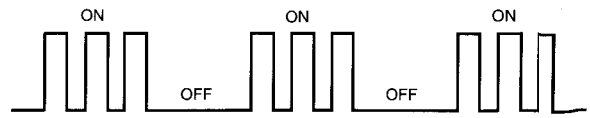
No. of Flashes	Notes	Error code	Description
-		00	No error.
2	(2)	30	Jungle nacks IIC bus1 transmisson.
3	(3)	31	Jungle FAULT (not OK) - flags.
4	(2)	32	Jungle - No H flyback.
-		33	Jungle - Stack overflow.
5	(4)	40	Sound Processor nacks IIC bus1 transmission.
6	(3)	90	Protection input: X-ray protection.
6	(3)	91	Protection error: No V synchro.
7	(1)	10	NVM nacks IIC bus0 transmission.
8	(3)	20	Tuner nacks IIC bus1 transmission.
9	(1)	01	General IIC bus1 error (SDA1 or SCL1 are being held low.)

(1) Only reported on mains power up.
(2) Reported on mains power up or exiting standby.
(3) Reported at any time and result in the set reverting to standby mode.
(4) Reported at any time and result in the set reverting to audio mute mode.

Note : Deflection System Adjustments should not be carried out whilst using an NTSC (60Hz) signal, or if the signal is unlocked.

Flash Timing Example : e.g. error number 3

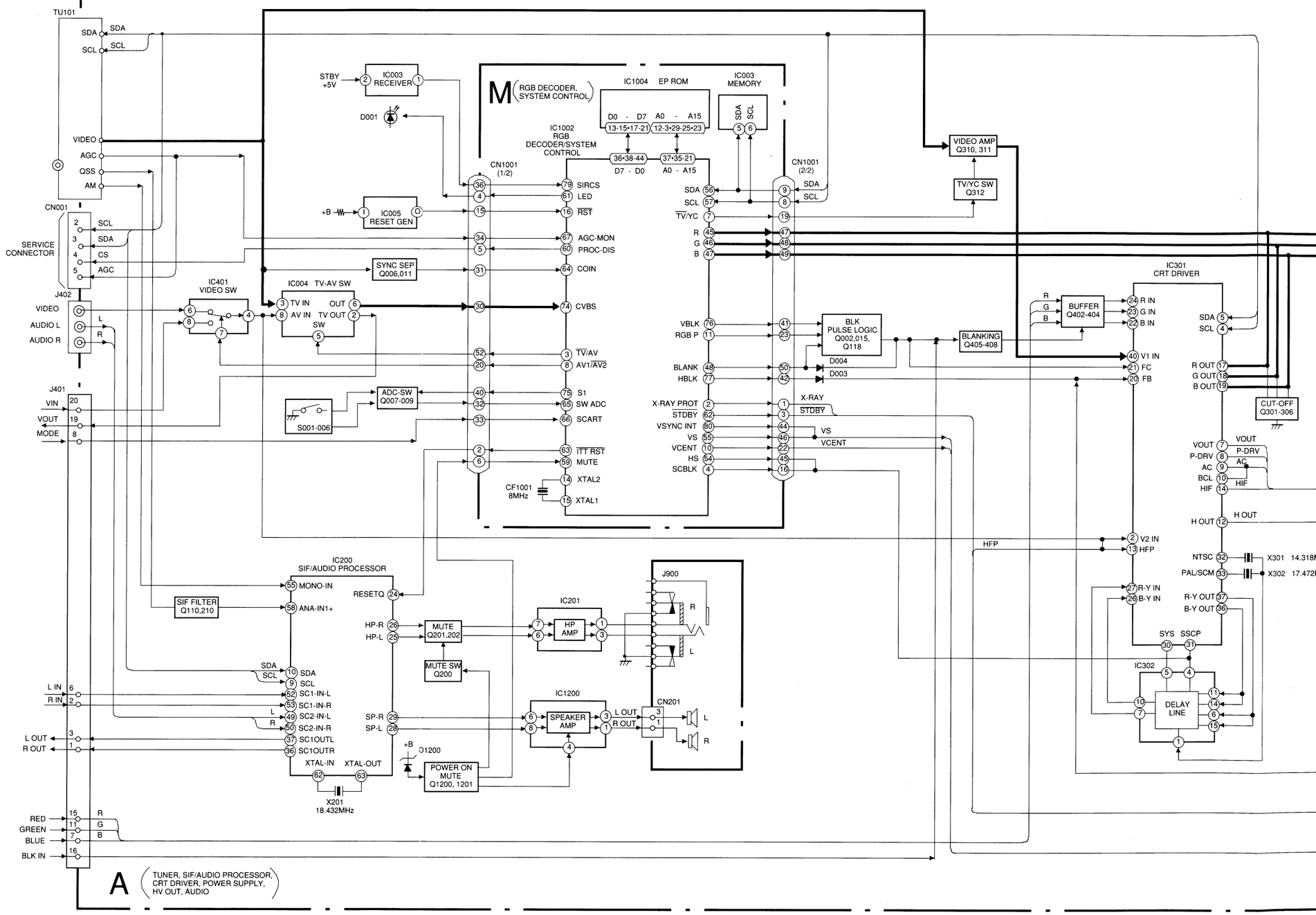
Stby LED

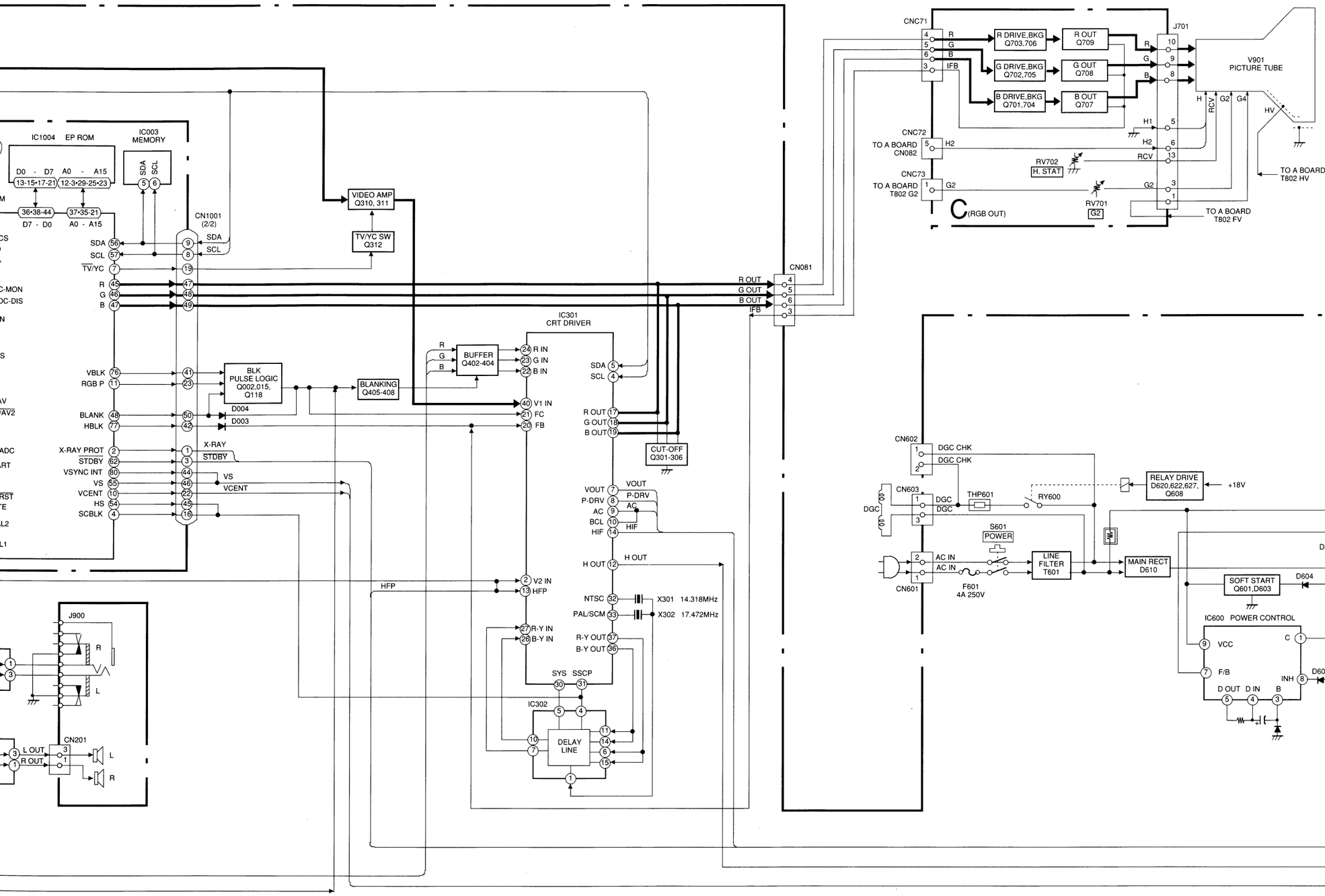


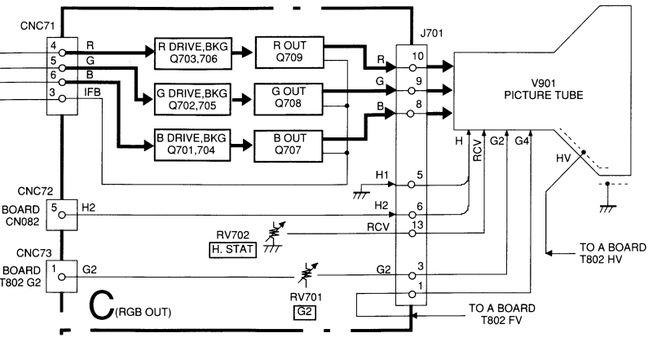
MEMO

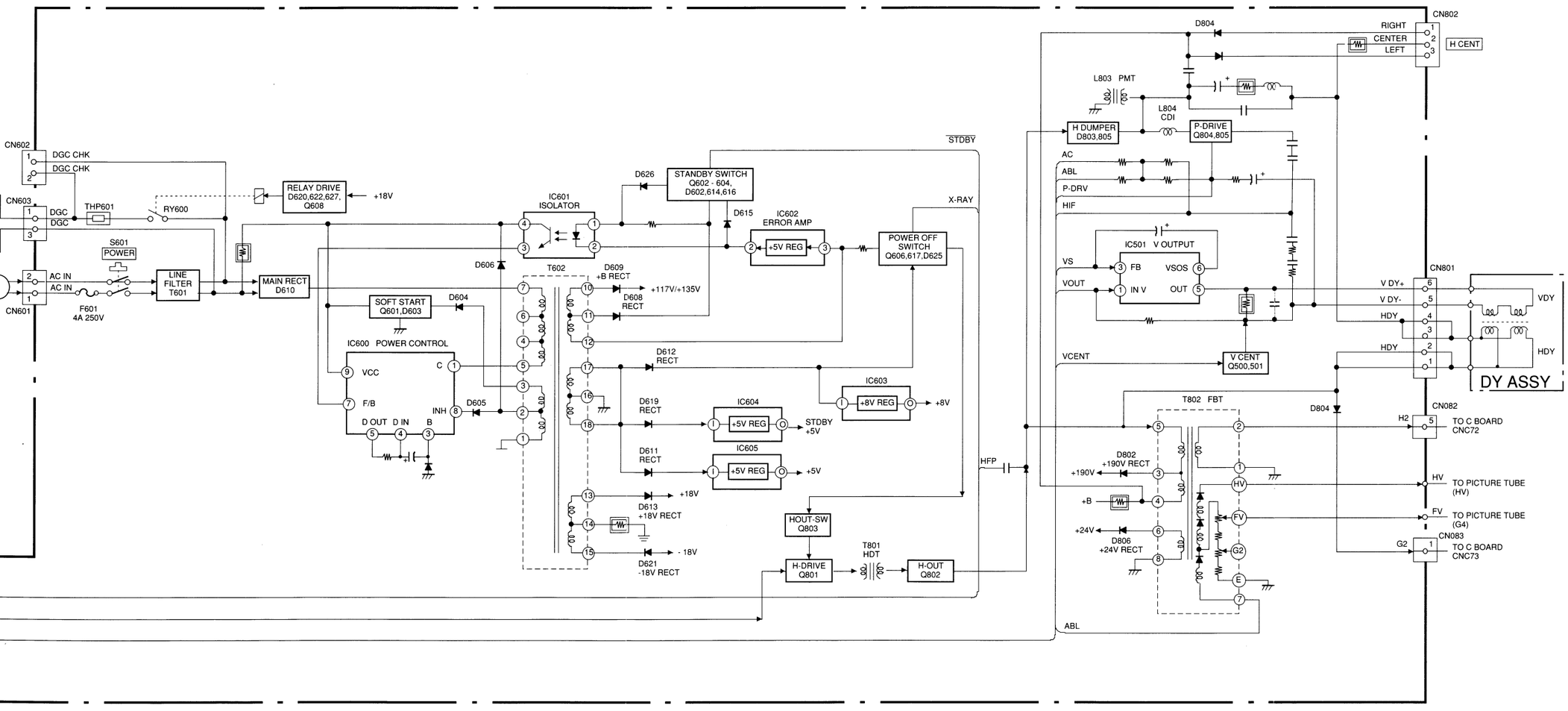
SECTION 5
DIAGRAMS

5-1. BLOCK DIAGRAM

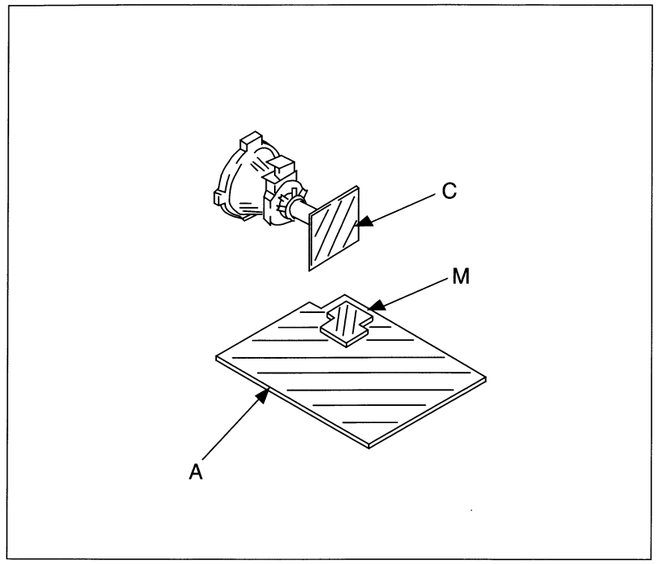



IC1004 EP ROM
IC003 MEMORY
D0 - D7 A0 - A15
13-15-17-21 12-3-29-25-23
36-38-44 37-35-21
D7 - D0 A0 - A15
SDA SCL
CN1001 (2/2)
VIDEO AMP Q310, 311
TV/YC SW Q312
TV/YC
R G B
VBLK RGB P
BLK PULSE LOGIC Q002,015, Q118
BLANKING Q405-408
BUFFER Q402-404
BLANK HBLK
D004 D003
X-RAY PROT STDBY VSYNC INT VS VCENT HS SCBLK
X-RAY STDBY VS VCENT
IC301 CRT DRIVER
R IN G IN B IN V1 IN FC FB
R OUT G OUT B OUT
CUT-OFF Q301-306
VOUT P-DRV AC BCL HIF
H OUT
HFP
V2 IN HFP
NTSC PAL/SCM
X301 14.318MHz
X302 17.472MHz
R-Y IN B-Y IN
R-Y OUT B-Y OUT
SYS SSCP
IC302
DELAY LINE
J900
CN201
L OUT R OUT
CN081
IFB
CNC71
R DRIVE,BKG Q703,706
G DRIVE,BKG Q702,705
B DRIVE,BKG Q701,704
R OUT Q709
G OUT Q708
B OUT Q707
J701
V901 PICTURE TUBE
H G2 G4 HV RCV H1 H2
CNC72
TO A BOARD CN082
CNC73
TO A BOARD T802 G2
RV702 H. STAT
RV701 G2
TO A BOARD T802 HV
TO A BOARD T802 FV
C (RGB OUT)
CN602
DGC CHK
CN603
DGC
THP601
RY600
RELAY DRIVE D620,622,627, Q608
+18V
S601 POWER
CN601
AC IN
F601 4A 250V
LINE FILTER T601
MAIN RECT D610
SOFT START Q601,D603
D604
IC600 POWER CONTROL
VCC F/B D OUT D IN B C INH
D605
IC601 ISOLATOR
D606
T602
D609 +B RECT
+117V/+135V
D608 RECT
D626
STANDBY SWITCH Q602 · 604, D602,614,616
D615
IC602 ERROR AMP
+5V REG
POWER OF SWITCH Q606,617,D6
D612 RECT
IC603
+8V REG
D619 RECT
IC604
STDBY +5V
D611 RECT
IC605
+5V
+18V
D613 +18V RECT
- 18V
D621 -18V RECT
HOUT-SW Q803
H-DRIVE Q801
T801 HDT


CNC71
4
5
6
3
R
G
B
IFB
R DRIVE,BKG Q703,706
G DRIVE,BKG Q702,705
B DRIVE,BKG Q701,704
R OUT Q709
G OUT Q708
B OUT Q707
J701
10
9
8
R
G
B
V901 PICTURE TUBE
H
RCV
G2
G4
HV
H1
5
CNC72
BOARD CN082
5
H2
H2
6
RCV
13
RV702 H. STAT
TO A BOARD T802 HV
CNC73
BOARD T802 G2
1
G2
G2
3
1
RV701 G2
TO A BOARD T802 FV
C (RGB OUT)


CN602
1
2
DGC CHK
DGC CHK
CN603
1
3
DGC
DGC
THP601
RY600
RELAY DRIVE D620,622,627, Q608
+18V
S601 POWER
2
1
AC IN
AC IN
CN601
F601 4A 250V
LINE FILTER T601
MAIN RECT D610
SOFT START Q601,D603
D604
IC600 POWER CONTROL
VCC
F/B
D OUT
D IN
B
C
INH
D605
IC601 ISOLATOR
D626
STANDBY SWITCH Q602 - 604, D602,614,616
D615
IC602 ERROR AMP
+5V REG
POWER OFF SWITCH Q606,617,D625
X-RAY
STDBY
D606
T602
D609 +B RECT
+117V/+135V
D608 RECT
D612 RECT
D619 RECT
IC604
+5V REG
STDBY +5V
IC603
+8V REG
+8V
D611 RECT
IC605
+5V REG
+5V
+18V
D613 +18V RECT
- 18V
D621 -18V RECT
HOUT-SW Q803
H-DRIVE Q801
T801 HDT
H-OUT Q802
HFP
D804
RIGHT
CENTER
LEFT
CN802
H CENT
L803 PMT
L804 CDI
H DUMPER D803,805
P-DRIVE Q804,805
AC
ABL
P-DRV
HIF
IC501 V OUTPUT
VS
VOUT
FB
VSOS
IN V
OUT
VCENT
V CENT Q500,501
CN801
V DY+
V DY-
HDY
HDY
VDY
HDY
DY ASSY
T802 FBT
D802 +190V RECT
+190V
+B
+24V
D806 +24V RECT
CN082
H2
TO C BOARD CNC72
HV
TO PICTURE TUBE (HV)
FV
TO PICTURE TUBE (G4)
CN083
G2
TO C BOARD CNC73
ABL

5-2. CIRCUIT BOARDS LOCATION



5-3. SCHEMATIC DIAGRAMS AND PRINTED WIRING BOARDS

Note :

- All capacitors are in µF unless otherwise noted. pF: µµF 50WV or less are not indicated except for electrolytic and tantalums.
- All resistors are in ohms. k = 1000 , M = 1000K
- Indication of resistance, which does not have one for rating electrical power, is as follows.

Pitch : 5 mm Rating electrical power ¼ W

- : nonflammable resistor.
- △ : internal component.
- ▭ : panel designation, or adjustment for repair.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- ⊥ : earth - ground.
- ⏦ : earth - chassis.
- ⌗ : no mounted.

Note : The components identified by shading and marked ⚠ are critical for safety. Replace only with the part number specified.

Reference information

RESISTOR	: RN	METAL FILM
	: RC	SOLID
	: FPRD	NONFLAMMABLE CARBON
	: FUSE	NONFLAMMABLE FUSIBLE
	: RS	NONFLAMMABLE METAL OXIDE
	: RB	NONFLAMMABLE CEMENT
	: RW	NONFLAMMABLE WIREWOUND
	: ⨳	ADJUSTABLE RESISTOR
COIL	: LF-8L	MICRO INDUCTOR
CAPACITOR	: TA	TANTALUM
	: PS	STYROL
	: PP	POLYPROPYLENE
	: PT	MYLAR
	: MPS	METALIZED POLYESTER
	: MPP	METALIZED POLYPROPYLENE
	: ALB	BIPOLAR
	: ALT	HIGH TEMPERATURE
	: ALR	HIGH RIPPLE

- Readings are taken with a colour-bar signal input.
- Readings are taken with 10MΩ digital multimeter.
- Voltages are dc with respect to ground unless otherwise noted.
- Voltage variations may be noted due to normal production tolerances.
- All voltages are in V.
- Circled numbers are waveform references.
- ▬ : B+ bus.
- ➡ : signal path. (RF)

A BOARD

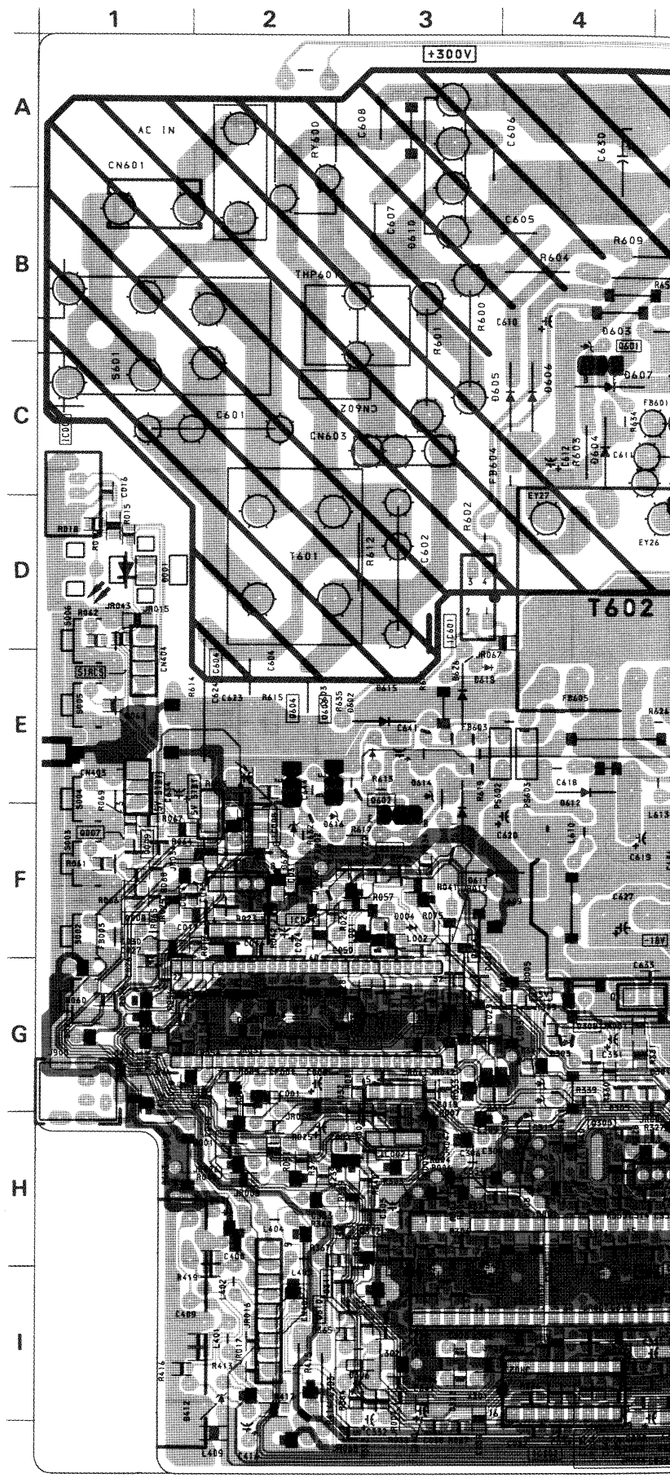
IC		DIODE	
IC003	C-1	D001	D-1
IC004	F-2	D002	F-11
IC005	F-2	D003	G-5
IC200	H-10	D004	F-3
IC201	G-11	D005	G-4
IC301	I-4	D006	G-4
IC302	I-4	D007	F-3
IC401	I-6	D009	B-8
IC501	D-9	D011	E-8
IC600	B-5	D015	H-6
IC601	D-3	D201	H-11
IC602	E-6	D301	H-4
IC603	F-6	D302	H-5
IC604	E-2	D306	I-3
IC605	G-5	D401	H-12
IC1200	G-7	D402	H-12
		D403	H-13
TRANSISTOR		D404	H-12
		D405	G-12
Q002	F-3	D406	G-12
Q006	F-10	D407	G-12
Q007	F-1	D408	I-12
Q008	F-1	D409	I-12
Q009	F-1	D410	I-12
Q011	G-9	D411	H-2
Q012	G-3	D412	I-2
Q013	G-3	D415	H-12
Q014	F-3	D416	I-10
Q015	I-7	D417	I-10
Q107	G-10	D501	C-8
Q110	F-11	D602	E-3
Q118	G-12	D603	B-4
Q200	H-7	D604	C-4
Q201	G-10	D605	C-4
Q202	H-10	D606	C-4
Q204	H-11	D607	C-4
Q205	G-11	D608	E-5
Q210	I-9	D609	E-6
Q300	H-4	D610	B-3
Q301	H-5	D611	F-3
Q302	H-5	D612	E-4
Q303	H-5	D613	F-5
Q304	I-5	D614	E-3
Q305	H-5	D615	E-3
Q306	H-5	D616	F-2
Q310	I-2	D617	E-7
Q311	I-2	D619	F-3
Q312	H-3	D620	A-7
Q402	G-13	D621	F-4
Q403	H-12	D622	A-6
Q404	H-12	D625	F-7
Q405	G-12	D626	E-3
Q406	G-13	D627	A-6
Q407	H-12	D802	A-12
Q408	G-12	D803	C-9
Q500	E-12	D804	B-9
Q501	E-11	D805	D-9
Q601	C-4	D806	D-13
Q602	E-3	D807	C-7
Q603	E-2	D809	A-11
Q604	E-2	D810	D-12
Q606	F-6	D811	D-12
Q608	A-7	D1200	H-7
Q617	F-7		
Q801	C-7		
Q802	B-8		
Q803	F-8		
Q804	B-7		
Q805	B-8		
Q1200	H-7		
Q1201	H-7		

Note :

- ▒▒▒ : Pattern from the side which enables seeing.
- ▓▓▓ : Pattern of the rear side.

A TUNER, SIF/AUDIO PROCESSOR, CRT DRIVER, POWER SUPPLY, HV OUT, AUDIO

A Board



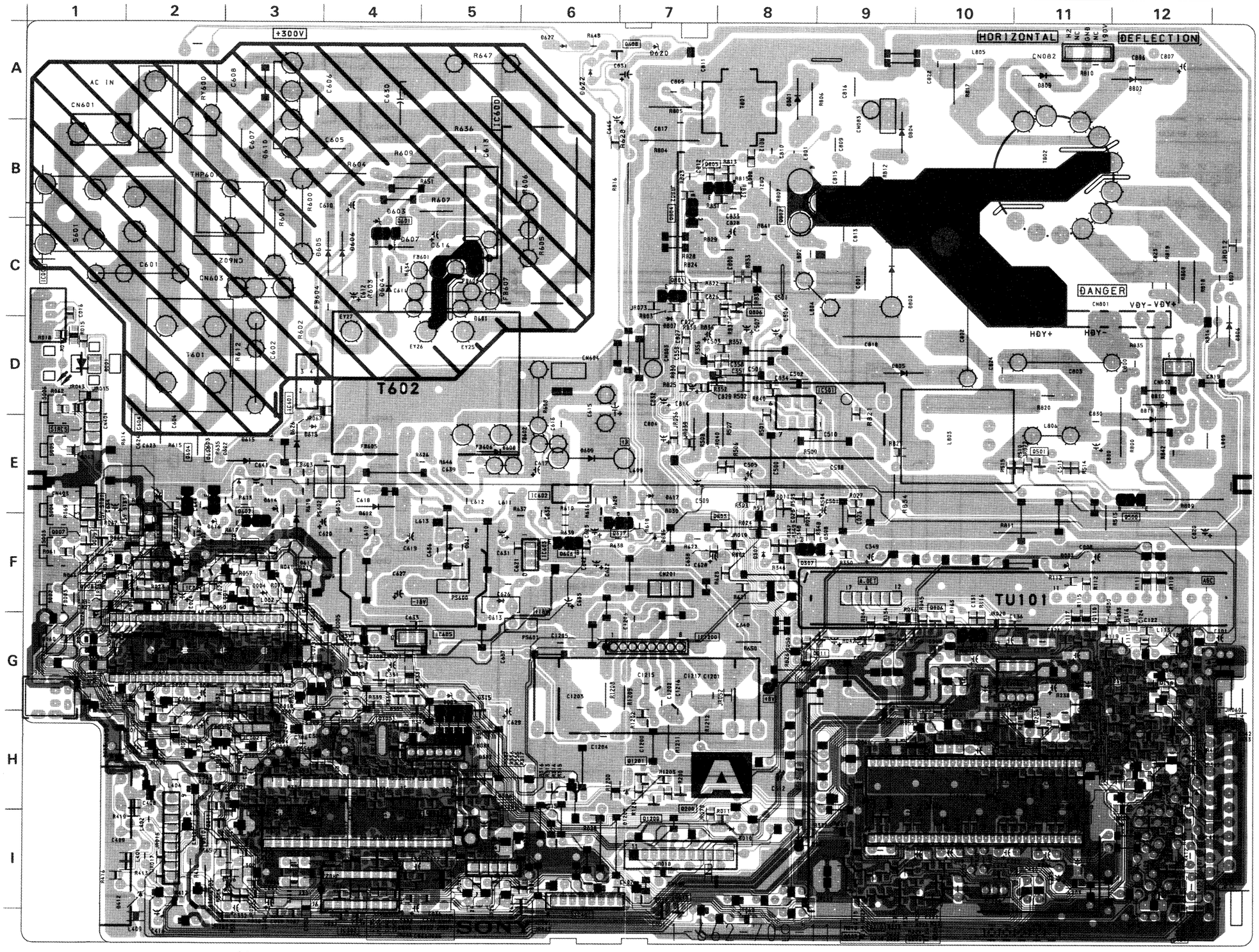
KV-25R1

KV-25R1

A [TUNER, SIF/AUDIO PROCESSOR, CRT DRIVER, POWER SUPPLY, HV OUT, AUDIO]

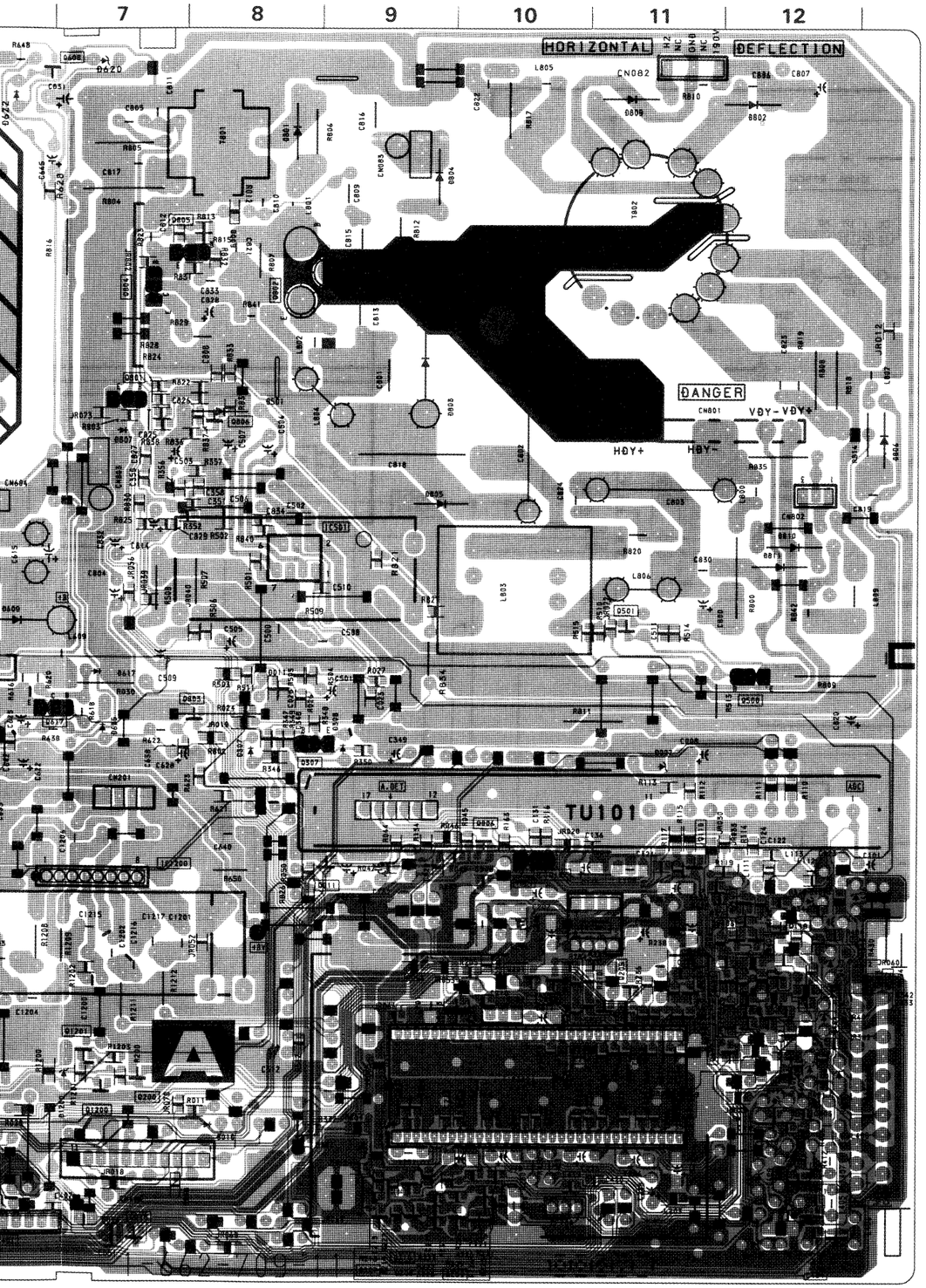
A Board

NOTE:
The circuit indicated as left contains high voltage of over 600 Vp-p. Care must be paid to prevent an electric shock in inspection or repairing.



enables seeing.

NOTE:
The circuit indicated as left contains high voltage of over 600 Vp-p. Care must be paid to prevent an electric shock in inspection or repairing.



A BOARD IC VOLTAGE TABLE

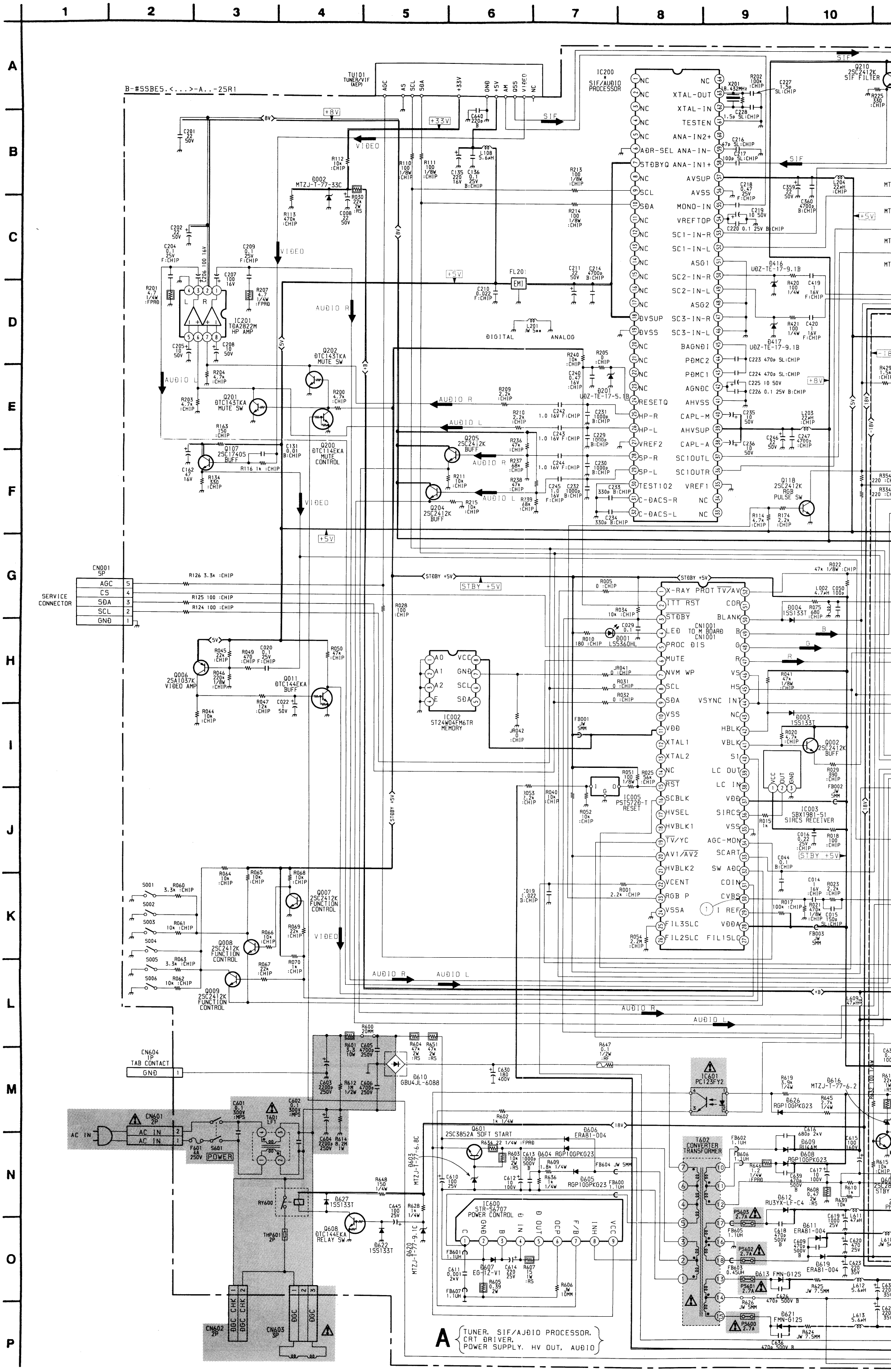
IC Voltage Table					
Ref No	Pin No	Voltage (V)	Ref No	Pin No	Voltage (V)
IC004	2	2.0	IC302	1	1.6
	3	2.2		2	4.7
	6	1.9		4	1.3
	7	5.0		6-7	1.4
	8	1.8		8	0.2
IC200	7	4.8		10-11	1.4
	9	3.1		13	4.7
	10	3.1		14-15	1.1
	18	4.8		16	1.6
	24	4.5	IC401	4	2.1
	31-32	3.8		6	3.0
	36-37	3.8		7	2.7
	38	7.0		8	3.0
	39	8.0	IC501	2	28.3
	40	7.0		3	1.4
	42-45	3.8		5	20.0
	49-50	3.8		6	28.6
	52-53	3.8		7	2.6
	54	2.6	IC1200	2	15.8
	55	3.8		4	7.0
	57	4.8		5	-16.0
	58-59	1.5			
	62-63	2.4			
IC201	1	3.5			
	2	8.0			
	3	3.5			
	5	0.5			
	8	0.5			
IC301	1	1.6			
	2	0.8			
	3	1.3			
	4-5	3.3			
	6	0.9			
	7	1.5			
	8	1.0			
	9	1.3			
	10	2.3			
	11	1.6			
	12	0.3			
	13	0.4			
	14	1.0			
	15	2.1			
	17-19	2.4			
	20	3.1			
	22-23	3.0			
	24	2.9			
	26-27	3.1			
	28	1.0			
	31	1.3			
	32-33	1.8			
	35	4.7			
	36	2.5			
	37	2.4			
	38	0.8			
	39	3.0			
	40	2.8			

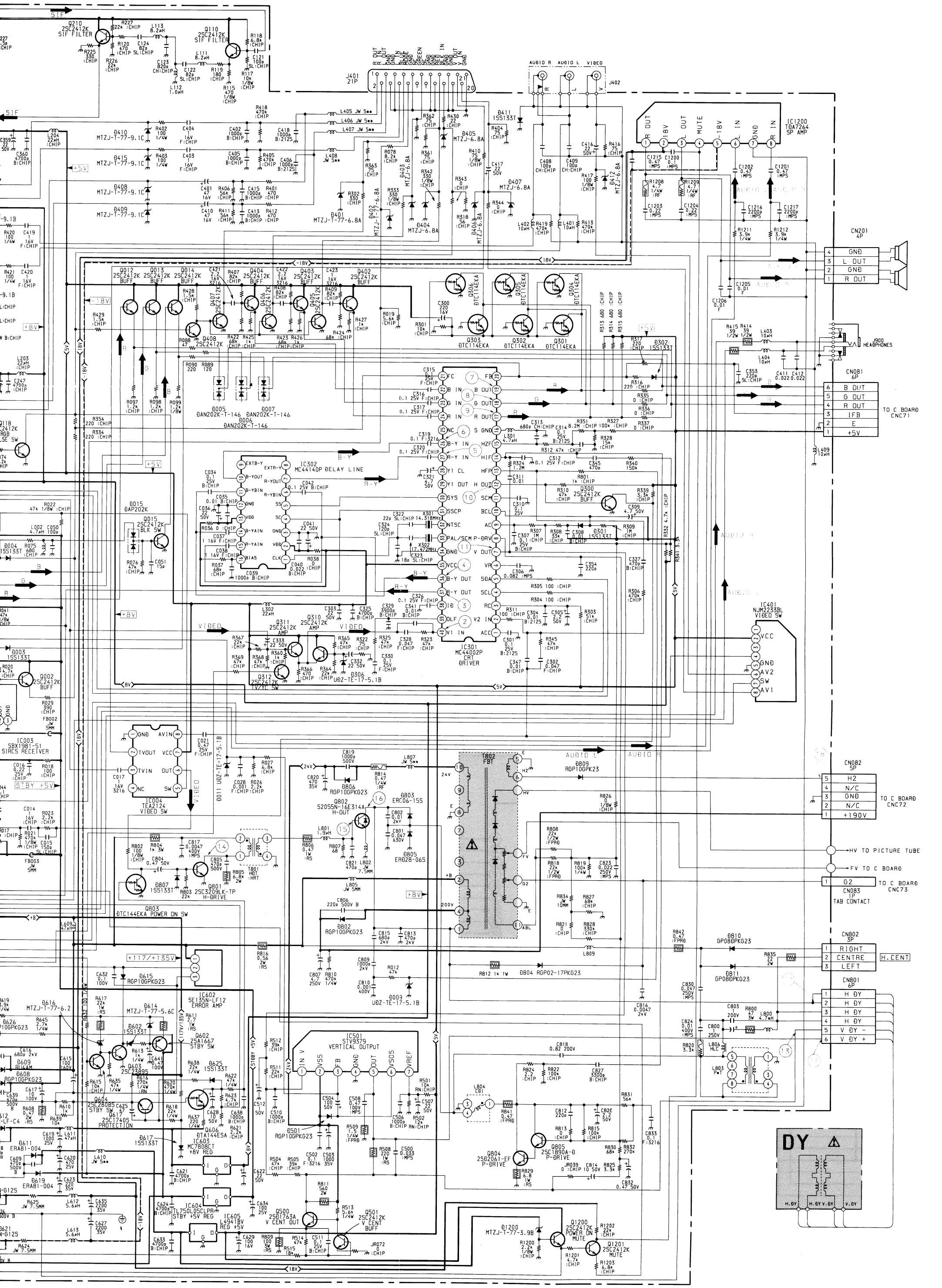
A BOARD TRANSISTOR TABLE

Transistor Voltage Table			
Ref No	B Base	C Collector	E Emitter
Q002	-	5.0	-
Q006	4.6	0.7	4.8
Q007	-	5.0	0
Q008	5.0	5.0	4.5
Q009	0.1	5.0	4.5
Q011	0.6	5.0	0
Q012	-	5.0	-
Q013	-	5.0	-
Q014	-	5.0	-
Q110	4.6	8.0	4.0
Q118	-	-	0
Q201	-	-	0
Q202	-	-	0
Q204	4.7	8.0	4.0
Q205	4.6	8.0	4.0
Q210	3.5	8.0	2.9
Q300	0.3	0.6	0
Q301	0	2.0	0
Q302	0	2.1	0
Q303	0	2.2	0
Q304	0	2.0	0
Q305	0	2.1	0
Q306	0	2.2	0
Q310	1.7	5.0	3.0
Q311	3.6	5.0	3.0
Q312	-0.2	-	0
Q403	-	-	-
Q404	-	-	-
Q500	5.4	19.7	4.8
Q501	0.6	5.4	0
Q601	-0.3	-2.2	-2.6
Q602	68.0	8.0	68.4
Q603	0	67.7	0
Q604	0.6	0	0
Q608	-	15.8	0
Q801	0	120	0
Q802	-0.2	120	0
Q803	0.1	0.6	0
Q804	0.5	16.0	-
Q805	1.0	16.0	0.5
Q1201	3.5	7.0	2.8

A BOARD * MARK

Ref. No \ Model	25R1A	25R1D	25R1E	25R1K	25R1R
IC200	MSP3400C-PP-C6	MSP3400C-PP-C6	MSP3410B-PP-F7	MSP3400C-PP-C6	MSP3400C-PP-C6

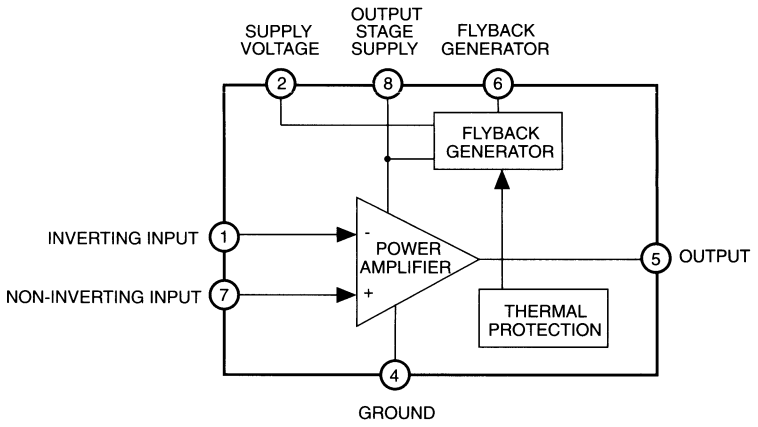

B-#SSBE5.<...>-A..-25R1
TU101 TUNER/VIF (AEP)
AGC AS SCL SDA +33V GND +5V AM QSS VIDEO NC
IC200 * SIF/AUDIO PROCESSOR
SIF
VIDEO
AUDIO R
AUDIO L
+8V
+33V
+5V
8V
STBY +5V
IC201 TDA2822M HP AMP
IC002 ST24W04FM6TR MEMORY
IC005 PST5720-T RESET
IC003 SBX1981-51 SIRCS RECEIVER
IC600 STR-S6707 POWER CONTROL
IC601 PC123FY2
T602 CONVERTER TRANSFORMER
Q201 DTC143TKA MUTE SW
Q202 DTC143TKA MUTE SW
Q200 DTC114EKA MUTE CONTROL
Q205 2SC2412K BUFF
Q204 2SC2412K BUFF
Q107 2SC1740S BUFF
Q006 2SA1037K VIDEO AMP
Q011 DTC144EKA BUFF
Q007 2SC2412K FUNCTION CONTROL
Q008 2SC2412K FUNCTION CONTROL
Q009 2SC2412K FUNCTION CONTROL
Q601 2SC3852A SOFT START
Q608 DTC144EKA RELAY SW
Q210 2SC2412K SIF FILTER
Q118 2SC2412K RGB PULSE SW
Q001 LS5360HL
Q002 2SC2412K BUFF
CN001 5P
SERVICE CONNECTOR
AGC CS SDA SCL GND
CN604 1P TAB CONTACT
CN601 2P
AC IN
CN602 2P
CN603 3P
CN1001 TO M BOARD
FL201
RY600
THP601
S001 S002 S003 S004 S005 S006
A (TUNER, SIF/AUDIO PROCESSOR, CRT DRIVER, POWER SUPPLY, HV OUT, AUDIO)


Q210 2SC2412K SIF FILTER
Q110 2SC2412K SIF FILTER
J401 21P
J402
AUDIO R AUDIO L VIDEO
IC1200 TDA7264 SP AMP
R OUT -18V L OUT MUTE +18V L IN GND R IN
IC302 MC44140P DELAY LINE
IC301 MC44002P CRT DRIVER
IC401 NJM2233BL VIDEO SW
VCC GND AV2 SW AV1
IC003 SBX1981-51 SIRCS RECEIVER
IC004 TEA2124 VIDEO SW
IC501 STV9379 VERTICAL OUTPUT
IN V VSS FB GND OUT VSOS VREF
IC602 SE135N-LF12 ERROR AMP
IC603 MC78BCT +8V REG
IC604 TL750L05CLPR STBY +5V REG
IC605 L4941BV REG +5V
Q300 2SC2412K BUFF
Q301 DTC114EKA
Q302 DTC114EKA
Q303 DTC114EKA
Q304 DTC114EKA
Q305 DTC114EKA
Q306 DTC114EKA
Q307 2SC2412K BUFF
Q308 2SC2412K BUFF
Q309 2SC2412K BUFF
Q310 2SC2412K AMP
Q311 2SC2412K AMP
Q312 2SC2412K TV/VC SW
Q402 2SC2412K BUFF
Q403 2SC2412K BUFF
Q404 2SC2412K BUFF
Q405 2SC2412K BUFF
Q406 2SC2412K BUFF
Q407 2SC2412K BUFF
Q408 2SC2412K BUFF
Q012 2SC2412K BUFF
Q013 2SC2412K BUFF
Q014 2SC2412K BUFF
Q015 2SC2412K BLK SW
Q002 2SC2412K BUFF
Q003 2SC2389S
Q602 2SA1667 STBY SW
Q604 2SC2808S STBY SW
Q617 2SC1740S PROTECTION
Q801 2SC3209LK-TP H-DRIVE
Q802 S2055N-16E314A H-OUT
Q803 DTC144EKA POWER ON SW
Q804 2SD2061-EF P-DRIVE
Q805 2SC1890A-D P-DRIVE
Q500 2SD1763A V CENT OUT
Q501 2SC2412K V CENT BUFF
Q1200 2SC2412K POWER ON MUTE
Q1201 2SC2412K MUTE
Q803 DTC144EKA POWER ON SW
Q018 2SC2412K RGB SE SW
Q604 2SC2808S STBY SW
Q617 2SC1740S PROTECTION
Q002 2SC2412K BUFF
Q015 2SC2412K BLK SW
Q803 DTC144EKA POWER ON SW
Q018 2SC2412K RGB SE SW
Q300 2SC2412K BUFF
Q307 2SC2412K BUFF
Q308 2SC2412K BUFF
Q309 2SC2412K BUFF
Q310 2SC2412K AMP
Q311 2SC2412K AMP
Q312 2SC2412K TV/VC SW
Q402 2SC2412K BUFF
Q403 2SC2412K BUFF
Q404 2SC2412K BUFF
Q405 2SC2412K BUFF
Q406 2SC2412K BUFF
Q407 2SC2412K BUFF
Q408 2SC2412K BUFF
Q012 2SC2412K BUFF
Q013 2SC2412K BUFF
Q014 2SC2412K BUFF
Q210 2SC2412K SIF FILTER
Q110 2SC2412K SIF FILTER
Q801 2SC3209LK-TP H-DRIVE
Q802 S2055N-16E314A H-OUT

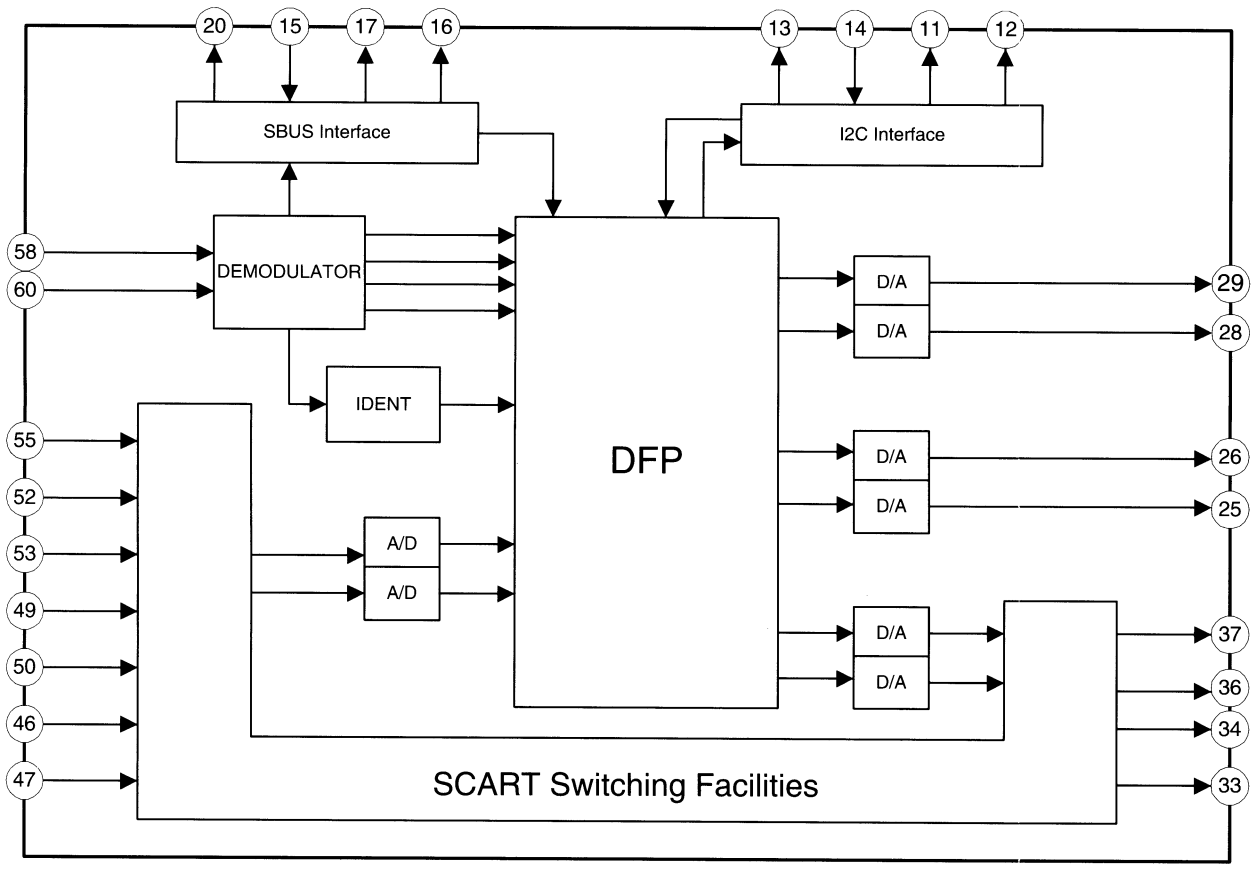
WAVEFORMS A BOARD

① 2.0 Vp-p (H)	② 1.0 Vp-p (H)	③ 1.0 Vp-p (H)	④ PAL 1.0 Vp-p (H)	④ SECAM/NTSC 1.2 Vp-p (H)
⑤ PAL 1.0 Vp-p (H)	⑤ SECAM 0.5 Vp-p (H)	⑤ NTSC 1.1 Vp-p (H)	⑥ PAL 1.4 Vp-p (H)	⑥ SECAM 0.7 Vp-p (H)
⑥ NTSC 1.5 Vp-p (H)	⑦ 2.0 Vp-p (H)	⑧ 2.3 Vp-p (H)	⑨ 2.3 Vp-p (H)	⑩ 0.8 Vp-p (H)
⑪ 1.8 Vp-p (H)	⑫ 55 Vp-p (H)	⑬ 8.4 Vp-p (H)	⑭ 220 Vp-p (H)	⑮ 10 Vp-p (H)
⑯ 1.4KVp-p (H)	⑰ 210 Vp-p (H)	⑱ 24 Vp-p (H)		

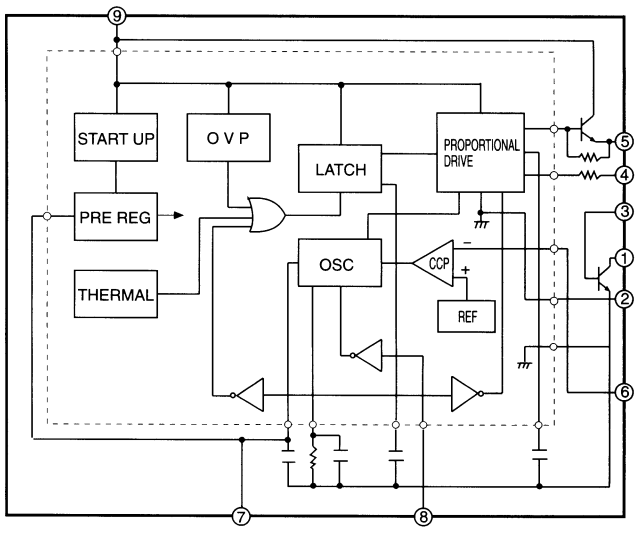
A BOARD IC501 STV9379



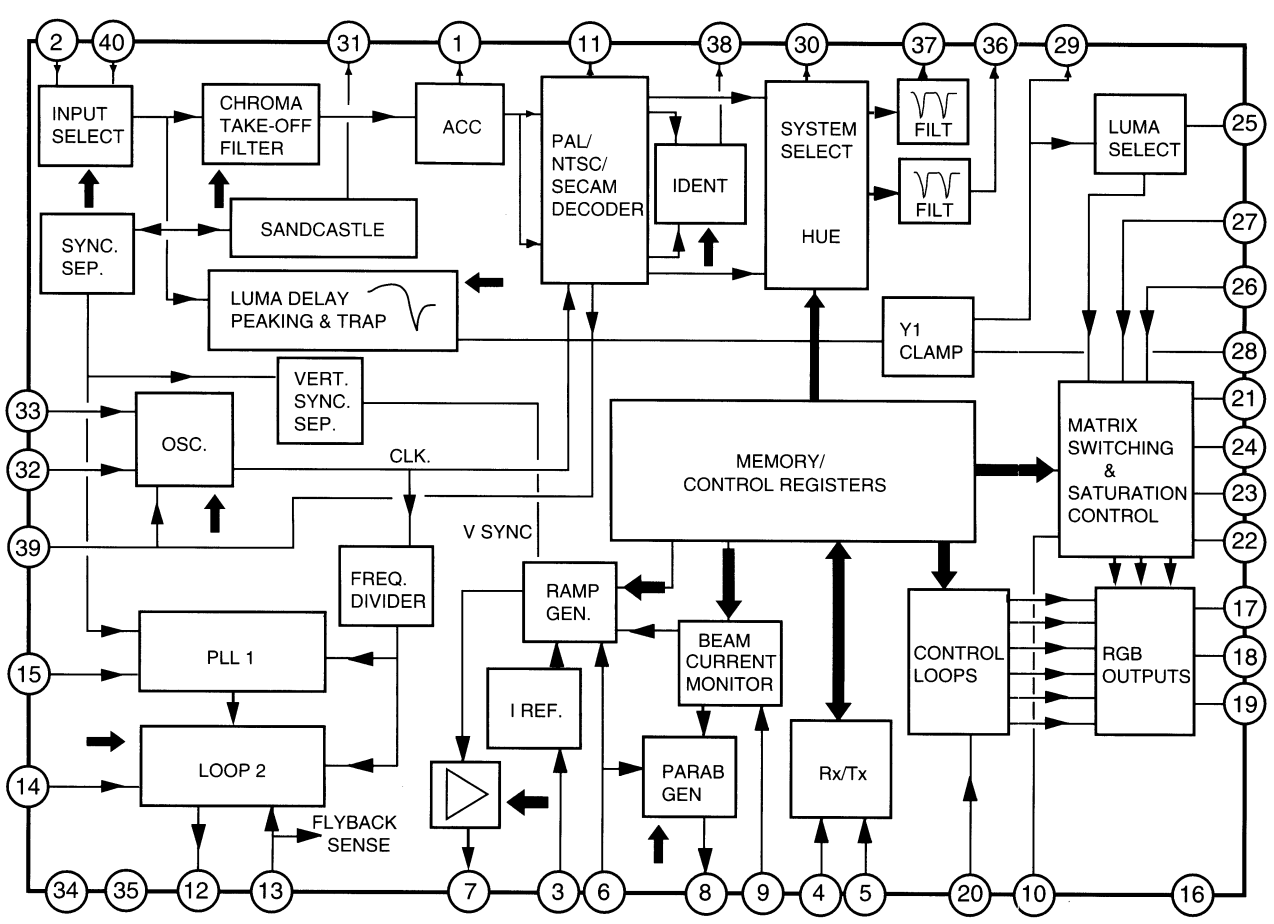
A BOARD IC200 MSP3400C-PP-C6/MSP3410B-PP-F7



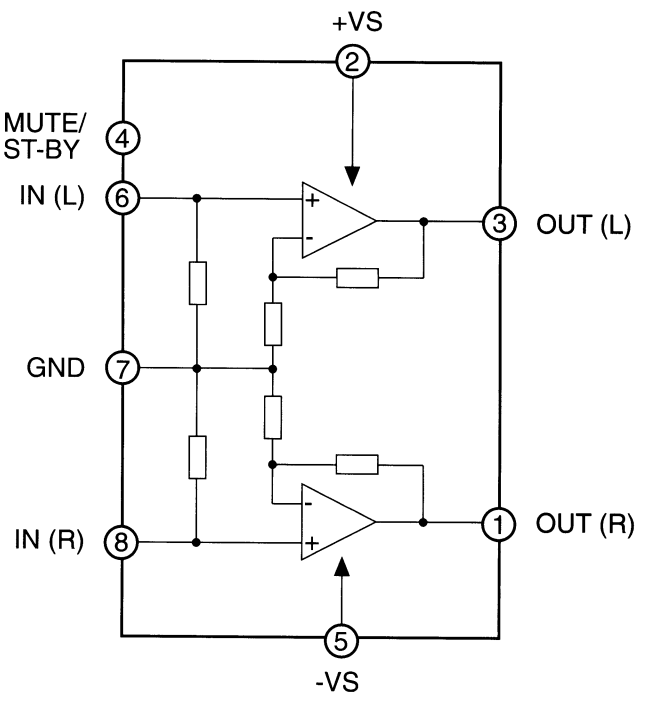
A BOARD IC600 STR-S6707

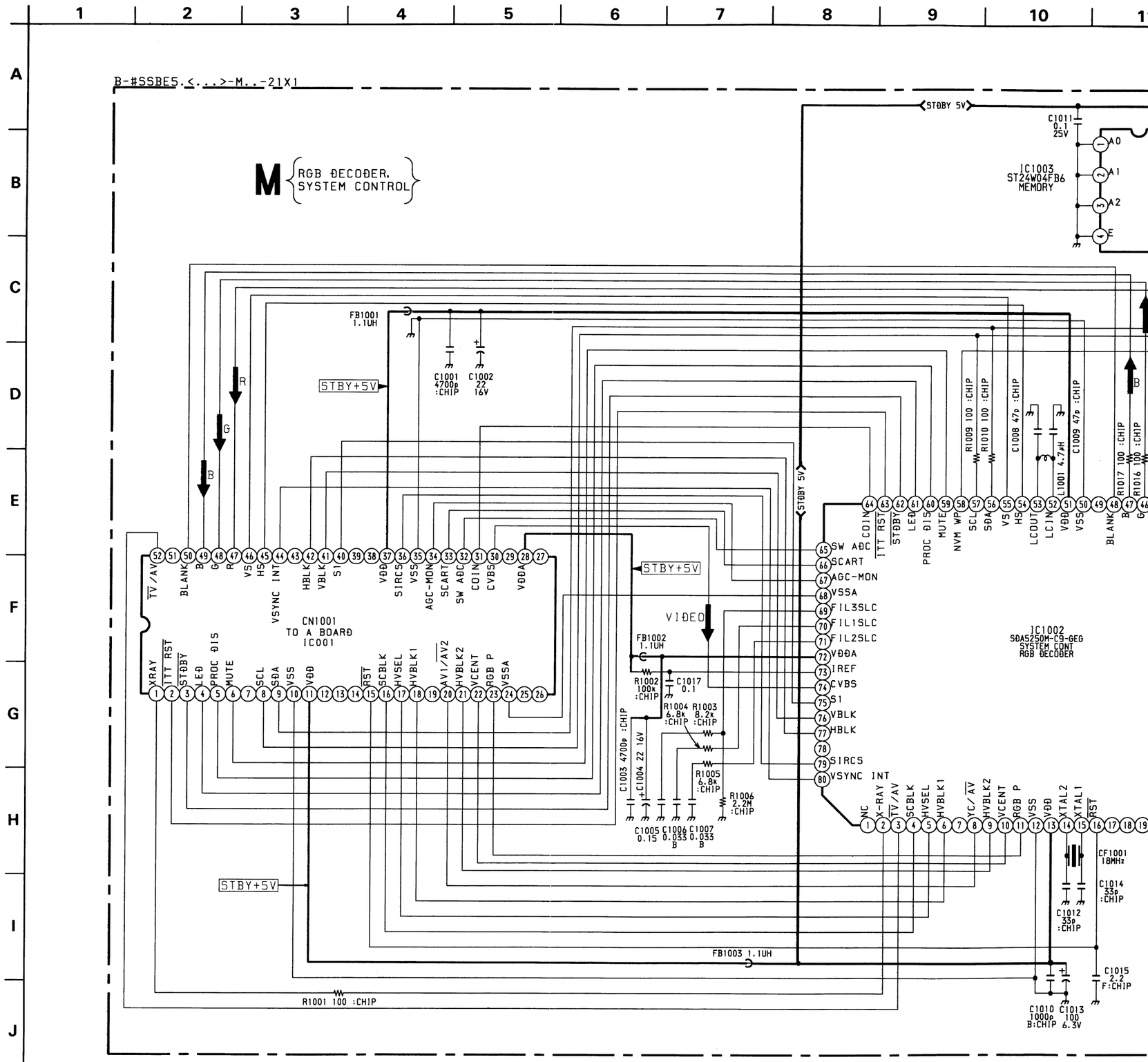


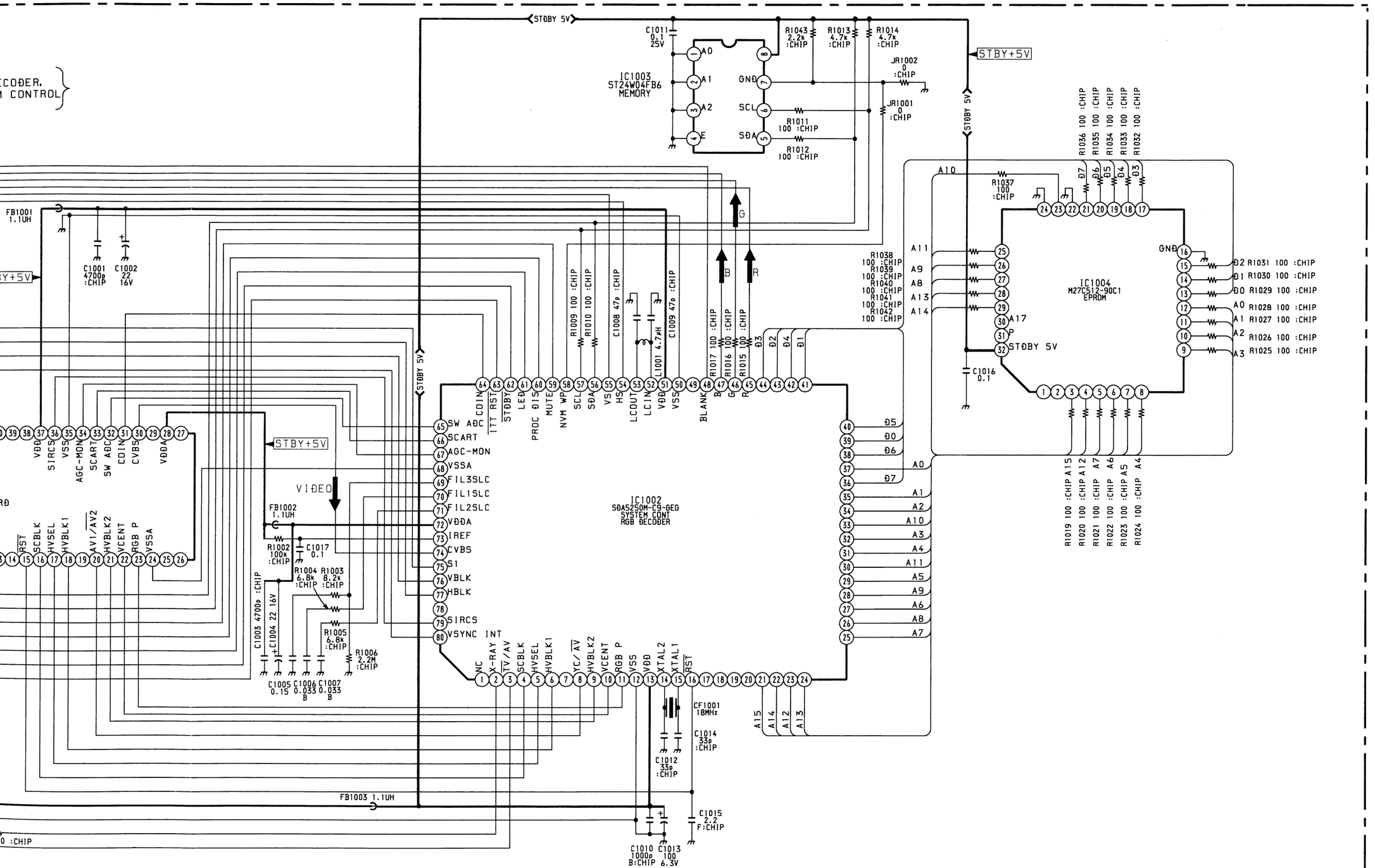
A BOARD IC301 MC44002P

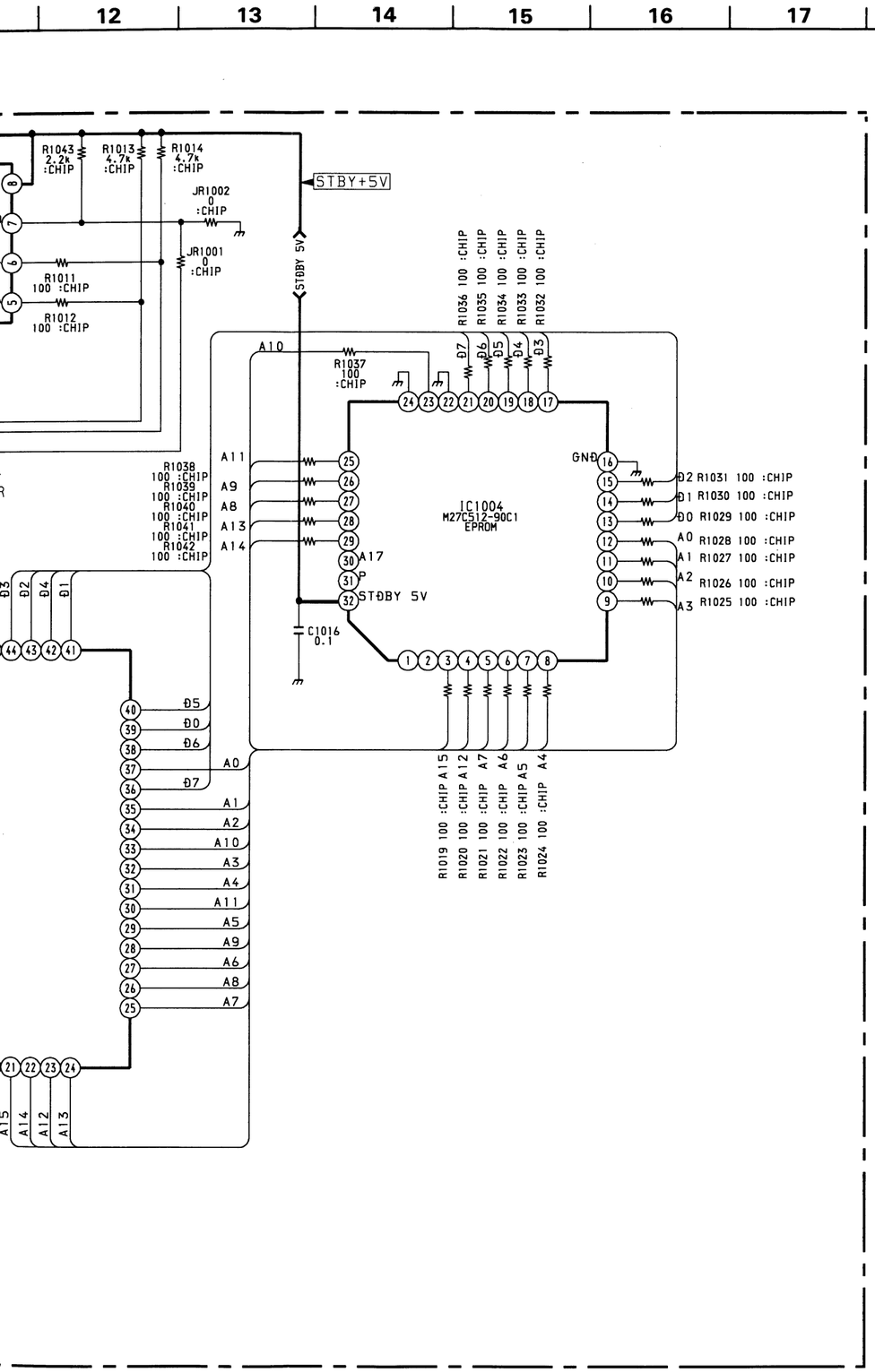


A BOARD IC1200 TDA7264



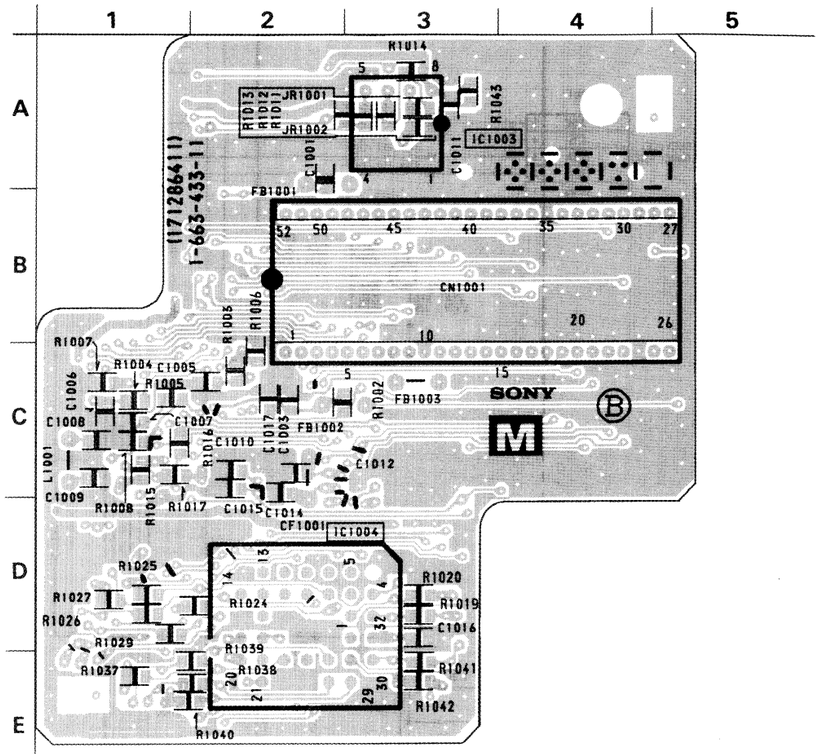

B-#SSBE5.<...>-M..-21X1
M
RGB DECODER, SYSTEM CONTROL
STDBY 5V
C1011 0.1 25V
IC1003 ST24W04FB6 MEMORY
A0
A1
A2
E
FB1001 1.1UH
C1001 4700p :CHIP
C1002 22 16V
STBY+5V
R
G
B
R1009 100 :CHIP
R1010 100 :CHIP
C1008 47p :CHIP
C1009 47p :CHIP
L1001 4.7μH
R1017 100 :CHIP
R1016 100 :CHIP
CN1001 TO A BOARD IC001
TV/AV
BLANK
B
G
R
VS
HS
VSYNC INT
HBLK
VBLK
SI
VDD
SIRCS
VSS
AGC-MON
SCART
SW ADC
COIN
CVBS
VDDA
XRAY
ITT RST
STDBY
LED
PROC DIS
MUTE
SCL
SDA
VSS
VDD
RST
SCBLK
HVSEL
HVBLK1
AV1/AV2
HVBLK2
VCENT
RGB P
VSSA
SW ADC
SCART
AGC-MON
VSSA
FIL3SLC
FIL1SLC
FIL2SLC
VDDA
IREF
CVBS
S1
VBLK
HBLK
SIRCS
VSYNC INT
NC
X-RAY
TV/AV
SCBLK
HVSEL
HVBLK1
YC/AV
HVBLK2
VCENT
RGB P
VSS
VDD
XTAL2
XTAL1
RST
IC1002 SDA5250M-C9-GEG SYSTEM CONT RGB DECODER
VIDEO
FB1002 1.1UH
R1002 100k :CHIP
C1017 0.1
R1004 6.8k :CHIP
R1003 8.2k :CHIP
R1005 6.8k :CHIP
R1006 2.2M :CHIP
C1003 4700p :CHIP
C1004 22 16V
C1005 0.15
C1006 0.033 B
C1007 0.033 B
CF1001 18MHz
C1014 33p :CHIP
C1012 33p :CHIP
FB1003 1.1UH
C1015 2.2 F:CHIP
C1010 1000p B:CHIP
C1013 100 6.3V
R1001 100 :CHIP


STBY 5V
STBY+5V
C1011 0.1 25V
IC1003 ST24W04FB6 MEMORY
A0
A1
A2
E
GND
SCL
SDA
R1043 2.2k :CHIP
R1013 4.7k :CHIP
R1014 4.7k :CHIP
JR1002 0 :CHIP
JR1001 0 :CHIP
R1011 100 :CHIP
R1012 100 :CHIP
FB1001 1.1UH
C1001 4700p :CHIP
C1002 22 16V
R1009 100 :CHIP
R1010 100 :CHIP
C1008 47p :CHIP
C1009 47p :CHIP
L1001 4.7μH
R1017 100 :CHIP
R1016 100 :CHIP
R1015 100 :CHIP
R1038 100 :CHIP
R1039 100 :CHIP
R1040 100 :CHIP
R1041 100 :CHIP
R1042 100 :CHIP
R1037 100 :CHIP
R1036 100 :CHIP
R1035 100 :CHIP
R1034 100 :CHIP
R1033 100 :CHIP
R1032 100 :CHIP
IC1004 M27C512-90C1 EPROM
R1031 100 :CHIP
R1030 100 :CHIP
R1029 100 :CHIP
R1028 100 :CHIP
R1027 100 :CHIP
R1026 100 :CHIP
R1025 100 :CHIP
C1016 0.1
R1019 100 :CHIP
R1020 100 :CHIP
R1021 100 :CHIP
R1022 100 :CHIP
R1023 100 :CHIP
R1024 100 :CHIP
IC1002 SDA5250M-C9-GEG SYSTEM CONT RGB DECODER
SW ADC
SCART
AGC-MON
VSSA
FIL3SLC
FIL1SLC
FIL2SLC
VDDA
IREF
CVBS
S1
VBLK
HBLK
SIRCS
VSYNC INT
VIDEO
FB1002 1.1UH
R1002 100k :CHIP
C1017 0.1
R1004 6.8k :CHIP
R1003 8.2k :CHIP
R1005 6.8k :CHIP
R1006 2.2M :CHIP
C1003 4700p :CHIP
C1004 22 16V
C1005 0.15
C1006 0.033 B
C1007 0.033 B
CF1001 18MHz
C1014 33p :CHIP
C1012 33p :CHIP
C1015 2.2 F:CHIP
C1010 1000p B:CHIP
C1013 100 6.3V
FB1003 1.1UH
R G B

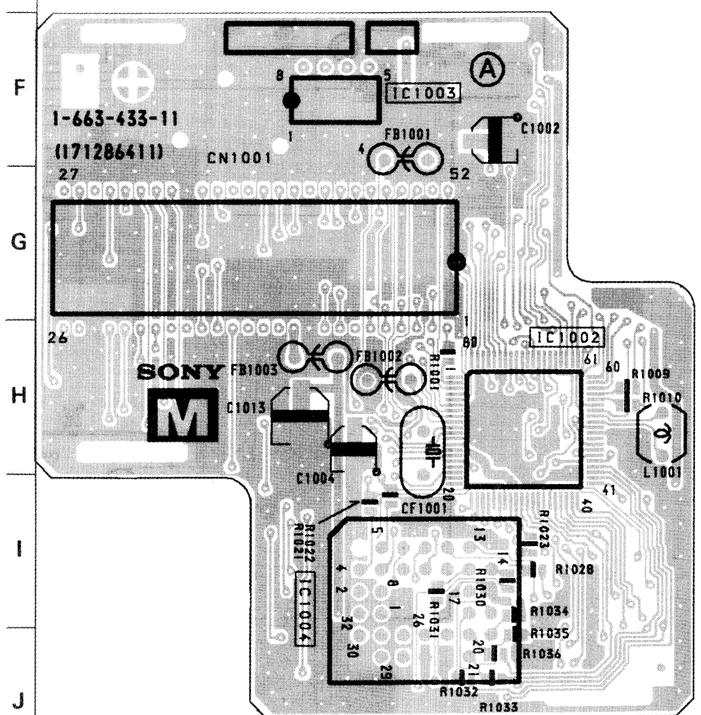


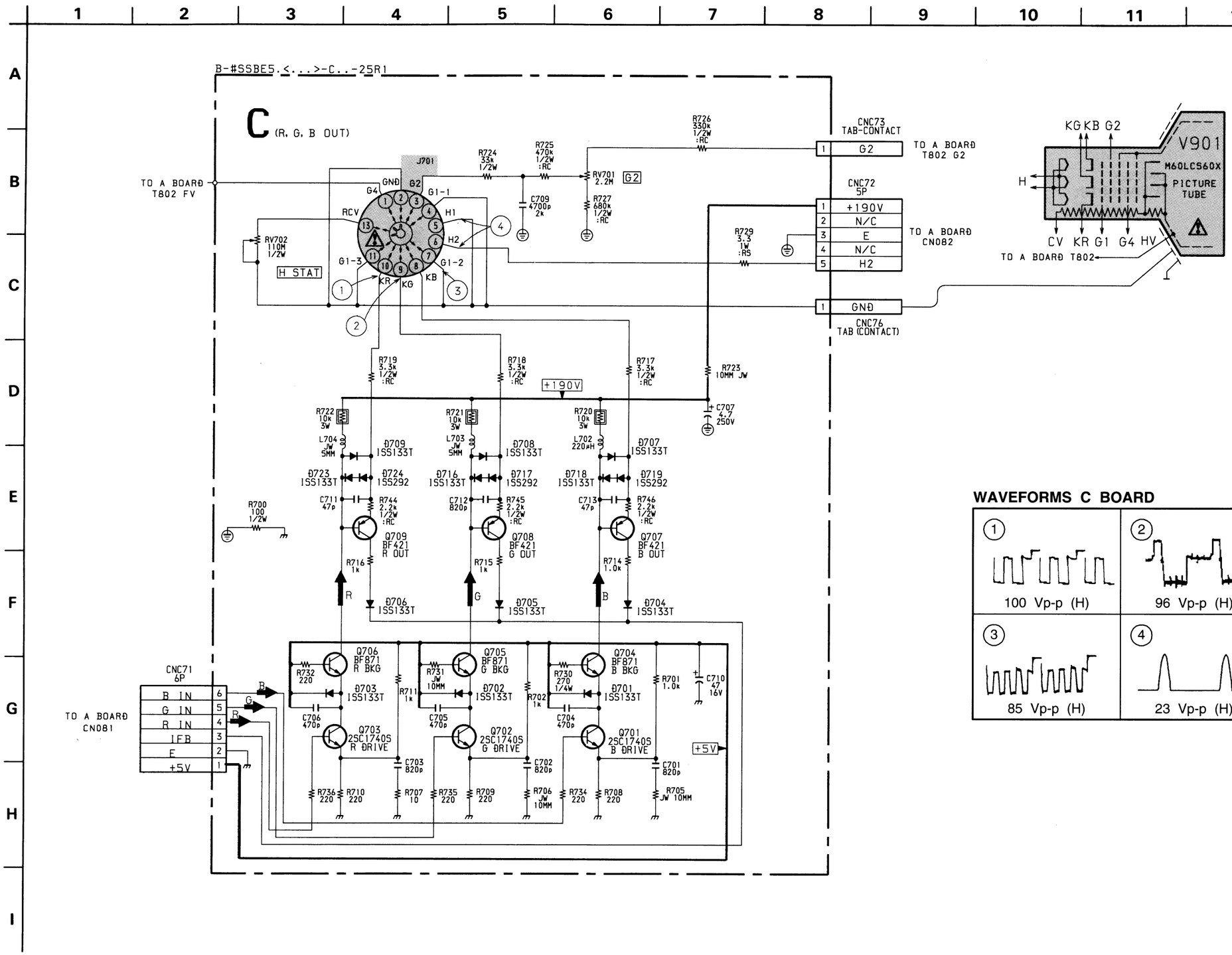
M [RGB DECODER, SYSTEM CONTROL]

M Board < Conductor Side >



M Board < Component Side >



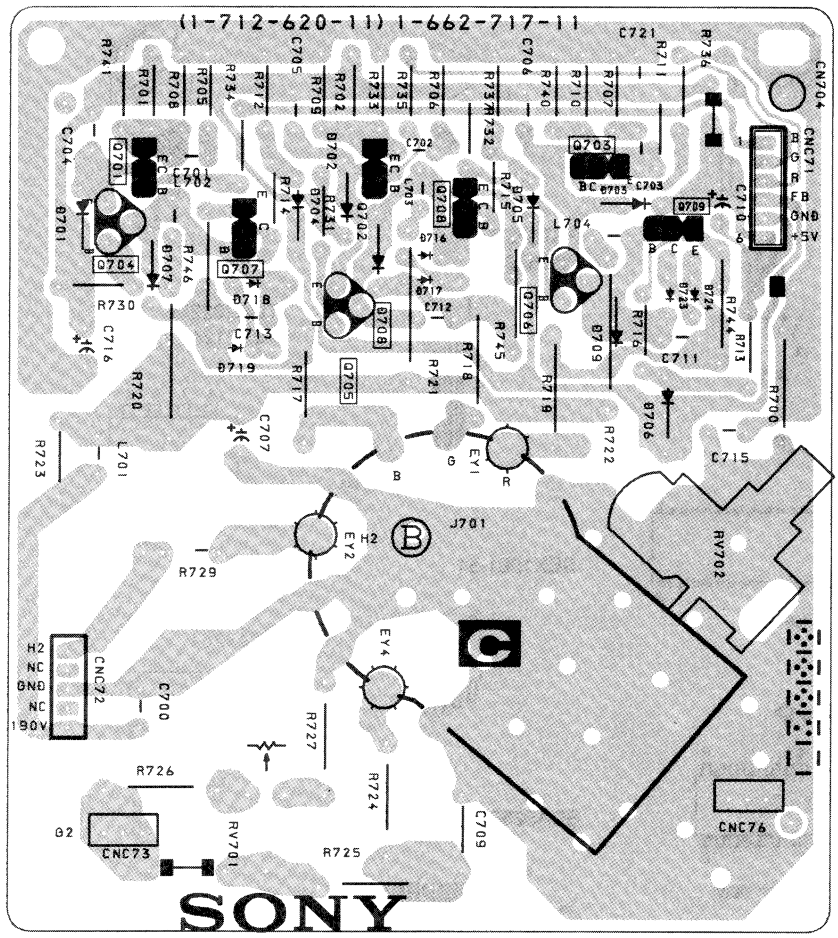


WAVEFORMS C BOARD

① 100 Vp-p (H)	② 96 Vp-p (H)
③ 85 Vp-p (H)	④ 23 Vp-p (H)

C [R,G,B OUT]

C Board

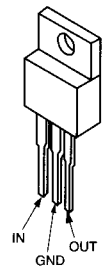


C BOARD
TRANSISTOR VOLTAGE TABLE

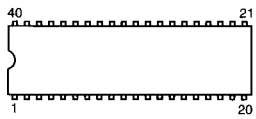
Transistor Voltage Table			
Ref No	B Base	C Collector	E Emitter
Q701	2.5	4.3	1.8
Q702	2.5	4.3	1.8
Q703	2.3	4.3	1.7
Q704	5.0	144.8	4.3
Q705	5.0	149.2	4.3
Q706	5.0	152.3	4.3
Q707	144.8	3.5	152.3
Q708	149.2	3.5	149.2
Q709	151.7	3.5	172.1

5-4. SEMICONDUCTORS

L4941BV
LM78080CT
MC7808CT
TEA7605
TL750L05CLPR

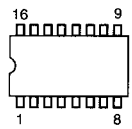


MC44002P



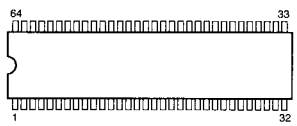
(TOP VIEW)

MC44140P



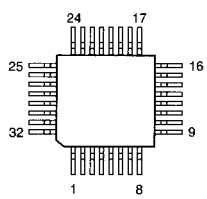
(TOP VIEW)

MSP3400C-PP-C6
MSP3410B-PP-F7



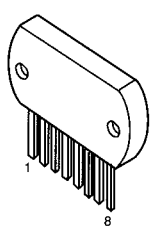
(TOP VIEW)

M27C512-90C1-BE5-1

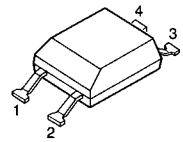


(TOP VIEW)

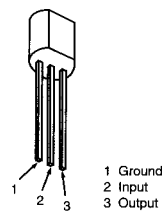
NJM2233BL



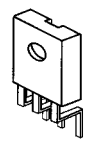
PC123F2
PC123FY2



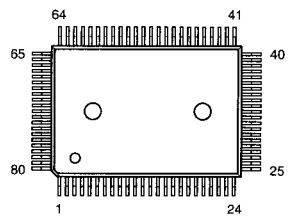
PST572D
PST572D-T



SBX1981-51

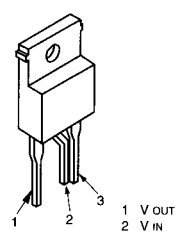


SDA5250M-C9-GEG

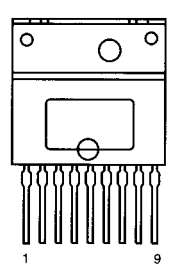


(MARKING SIDE VIEW)

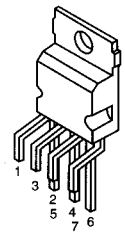
SE-135N
SE135N-LF12



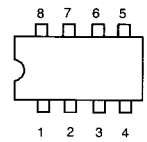
STR-S6707



STV9379

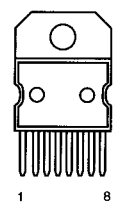


TDA2822M
TEA2124

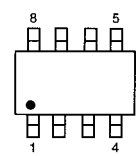


(TOP VIEW)

TDA7264



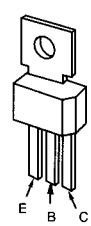
ST24W04FM6TR



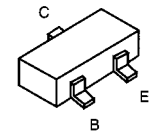
(TOP VIEW)

BF421-AMMO
2SA1091-O
2SC1890A-D
2SC2551-O

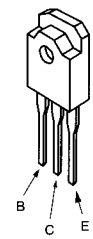
BF871-127



DTA144ESA
DTA144ESA-TP
DTC114EK
DTC114EKA-T146
DTC143TKA-T146
DTC144EKA-T146
2SA1037K-T-146-R
2SA1162-G
2SC2412K-QR
2SC2412K-T-146-R



S2055N-16E314A



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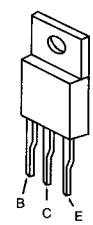
2SC3852A



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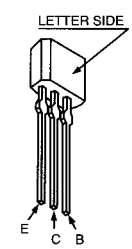

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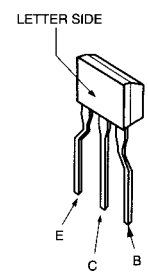

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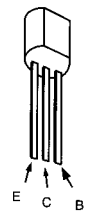

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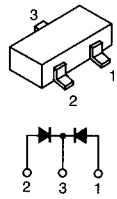

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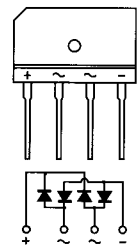

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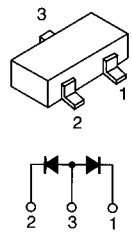

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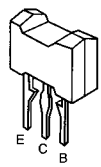

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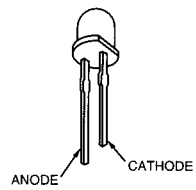

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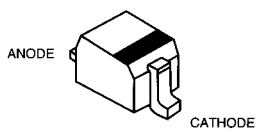
DTZ9.1
UDZ-TE-17-5.1B
UDZ-TE-17-9.1B



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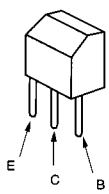
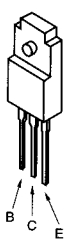
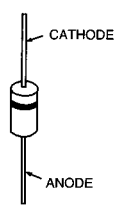


EG-1Z-V1	RGP10GPKG23
EL1Z	RGP02-17EL-6433
ERC06-15S	RGP02-17PKG23
ERD28-06S	RU3YX-LF-C4
ERD28-08S	RU-3YX-V1
FMN-G12S	RU4AM-T3
GP08D	1SS292T-77
GP08DPKG23	

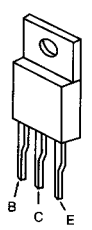
2SC4793
2SD1763A
2SD2061-E,F

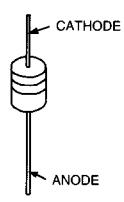




ERA81-004TP1	MTZJ-T-77-9.1C
ERA83-006	MTZJ-33C
MTZJ-T-77-33C	RD3.9ES-B2
MTZJ-T-77-3.9B	MTZJ-6.2B
MTZJ-T-77-5.6C	RD5.6ESB2
MTZJ-T-77-6.2	RD6.8ES-B2
MTZJ-T-77-6.8A	RD9.1ES-B3
MTZJ-T-77-6.8C	1SS133T-77

2SD2012





SECTION 6
EXPLODED VIEWS

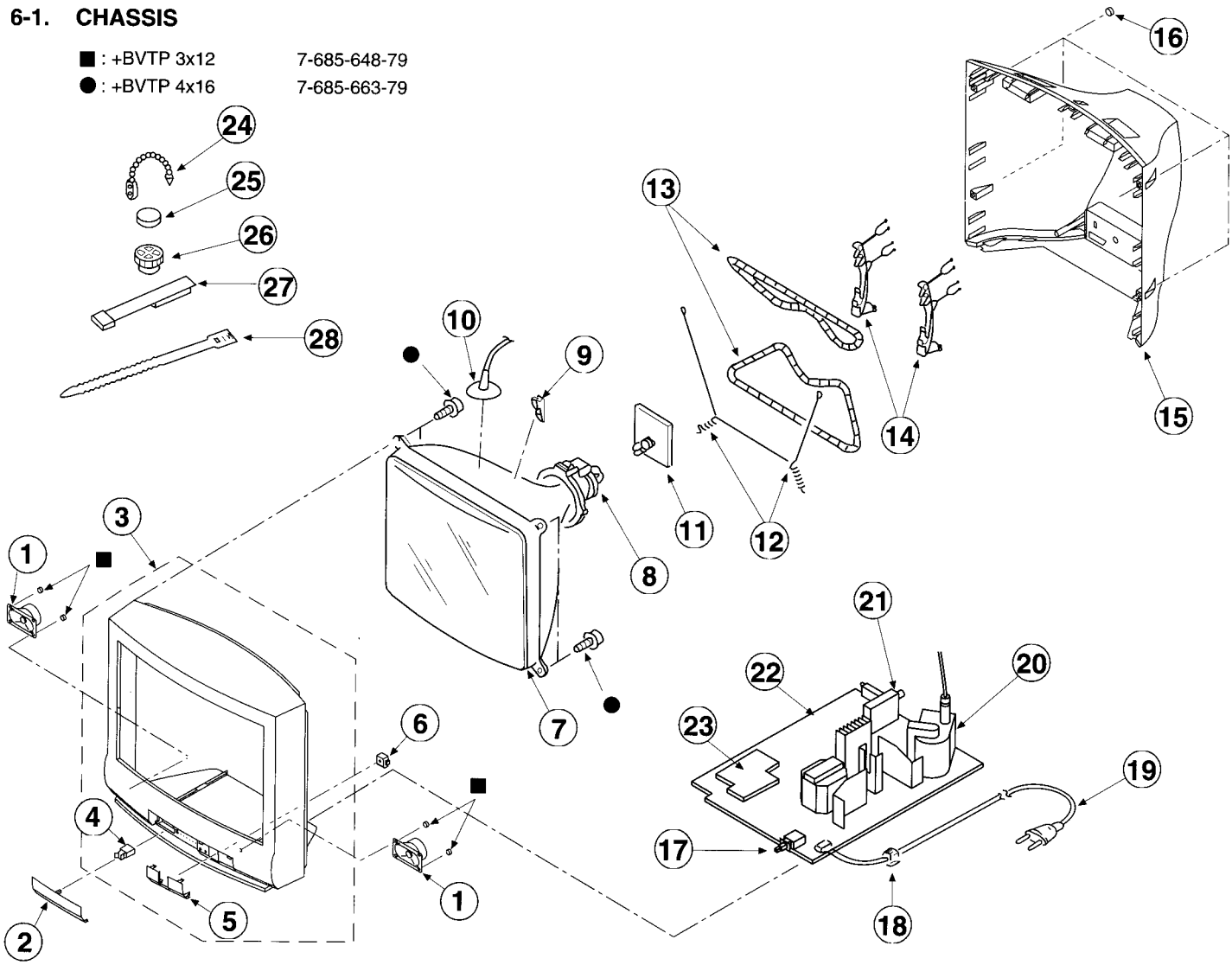
NOTE :

- Items with no part number and no description are not stocked because they are seldom required for routine service.
- The construction parts of an assembled part are indicated with a collation number in the remarks column.
- Items marked " * " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

The components identified by shading and marked ⚠ are critical for safety.
Replace only with the part number specified.

6-1. CHASSIS

■ : +BVTP 3x12 7-685-648-79
● : +BVTP 4x16 7-685-663-79



REF NO	PART NO	DESCRIPTION	REMARK
1	1-503-258-21	SPEAKER	
2	4-203-261-01	DOOR, CONTROL	
3	X-4200-285-1	BEZNET ASSY	4-5
4	4-047-464-01	CATCHER, PUSH	
5	4-203-260-01	WINDOW, ORNAMENTAL	
6	4-203-433-01	BUTTON, POWER	
7	⚠ 8-733-254-05	PICTURE TUBE (SD-257) (M60LCS60X)	
8	⚠ 8-451-404-21	DEFLECTION YOKE (Y25-GIABA)	
9	3-704-495-01	SPACER, DY	
10	⚠ 1-540-006-22	CAP ASSY, HIGH-VOLTAGE	
11	*A-1638-094-A	C BOARD, COMPLETE	
12	4-369-318-21	SPRING TENSION	
13	⚠ 1-406-806-21	COIL DEGAUSSING	
14	4-202-745-01	HOLDER, DGC (25)	
15	4-203-259-01	COVER, REAR	
16	4-203-043-01	SCREW (PT)	
17	⚠ 1-571-433-21	SWITCH PUSH (AC POWER)	
18	*4-202-531-01	AC CORD LOCK (SC)	
19	⚠ 1-765-286-11	CORD POWER	
20	⚠ 1-453-220-11	TRANSFORMER ASSY, FLYBACK (NX-1670/UZB4)	
21	1-693-338-11	TUNER (TUVIF) (AEP)	
22	*A-1632-555-A	A BOARD, COMPLETE (KV-25R1A)	
	*A-1632-554-A	A BOARD, COMPLETE (KV-25R1D)	
	*A-1632-495-A	A BOARD, COMPLETE (KV-25R1E)	
	*A-1632-556-A	A BOARD, COMPLETE (KV-25R1K)	
	*A-1632-557-A	A BOARD, COMPLETE (KV-25R1R)	
23	*A-1634-042-A	M BOARD, COMPLETE	

REF NO	PART NO	DESCRIPTION	REMARK
24	4-308-870-00	CLIP, LEAD WIRE	
25	1-452-032-00	MAGNET, DISK; 10MM Ø	
26	1-452-094-00	MAGNET, ROTATABLE DISK; 15MM Ø	
27	X-4387-214-1	PERMALLOY ASSY, CORRECTION	
28	3-701-007-00	BAND, BINDING	

SECTION 7
ELECTRICAL PARTS LIST

The components identified by shading and marked ⚠ are critical for safety.
Replace only with the part number specified.

- Items marked " * " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.

RESISTORS

When indicating parts by reference number, please include the board name.

CAPACITORS MF : mF, PF : mmF

COILS MMH : mH, µH : mH

A and M

REF.NO.	PART NO.	DESCRIPTION			REMARK
	*A-1632-555-A	A AND M BOARD, COMPLETE (KV-25R1A)			
		**********			
	*A-1632-554-A	A AND M BOARD, COMPLETE (KV-25R1D)			
		**********			
	*A-1632-495-A	A AND M BOARD, COMPLETE (KV-25R1E)			
		**********			
	*A-1632-556-A	A AND M BOARD, COMPLETE (KV-25R1K)			
		**********			
	*A-1632-557-A	A AND M BOARD, COMPLETE (KV-25R1R)			
		**********			
		< CAPACITOR >			
C008	1-126-965-11	ELECT	22MF	20%	50V
C014	1-164-346-11	CERAMIC CHIP	1MF		16V
C015	1-163-121-00	CERAMIC CHIP	150PF	5%	50V
C016	1-164-222-11	CERAMIC CHIP	0.22MF		25V
C017	1-162-638-11	CERAMIC CHIP	1MF		16V
C019	1-163-037-11	CERAMIC CHIP	0.022MF	10%	50V
C020	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C021	1-164-005-11	CERAMIC CHIP	0.47MF		25V
C022	1-124-903-11	ELECT	1MF	20%	50V
C028	1-163-009-00	CERAMIC CHIP	0.001MF	10%	50V
C029	1-163-077-00	CERAMIC CHIP	0.1MF		50V
C034	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C035	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C036	1-126-965-11	ELECT	22MF	20%	50V
C037	1-164-346-11	CERAMIC CHIP	1MF		16V
C038	1-164-346-11	CERAMIC CHIP	1MF		16V
C039	1-163-205-11	CERAMIC CHIP	0.001MF	10%	50V
C040	1-163-037-11	CERAMIC CHIP	0.022MF	10%	50V
C041	1-126-965-11	ELECT	22MF	20%	50V
C042	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C044	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C050	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C051	1-163-097-00	CERAMIC CHIP	15PF	5%	50V
C121	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C122	1-163-249-00	CERAMIC CHIP	82PF	5%	50V
C123	1-163-139-00	CERAMIC CHIP	820PF	5%	50V
C124	1-163-249-00	CERAMIC CHIP	82PF	5%	50V
C131	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C135	1-126-934-11	ELECT	220MF	20%	16V
C136	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C162	1-126-967-11	ELECT	47MF	20%	16V
C201	1-126-965-11	ELECT	22MF	20%	50V
C202	1-126-965-11	ELECT	22MF	20%	50V
C204	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C205	1-126-964-11	ELECT	10MF	20%	50V
C206	1-126-933-11	ELECT	100MF	20%	16V
C207	1-126-933-11	ELECT	100MF	20%	16V
C208	1-126-964-11	ELECT	10MF	20%	50V
C209	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C210	1-163-033-91	CERAMIC CHIP	0.022MF		50V
C211	1-126-965-11	ELECT	22MF	20%	50V
C214	1-163-017-00	CERAMIC CHIP	0.0047MF	10%	50V
C216	1-163-109-00	CERAMIC CHIP	47PF	5%	50V
C217	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C218	1-164-005-11	CERAMIC CHIP	0.47MF		25V
C219	1-126-964-11	ELECT	10MF	20%	50V
C220	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C223	1-163-133-00	CERAMIC CHIP	470PF	5%	50V
C224	1-163-133-00	CERAMIC CHIP	470PF	5%	50V
C225	1-126-964-11	ELECT	10MF	20%	50V
C226	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C227	1-163-084-00	CERAMIC CHIP	1.5PF	0.25PF	50V
C228	1-163-084-00	CERAMIC CHIP	1.5PF	0.25PF	50V
C229	1-163-009-11	CERAMIC CHIP	0.001MF	10%	50V
C230	1-163-009-11	CERAMIC CHIP	0.001MF	10%	50V
C231	1-163-009-11	CERAMIC CHIP	0.001MF	10%	50V
C232	1-163-009-11	CERAMIC CHIP	0.001MF	10%	50V
C233	1-163-003-11	CERAMIC CHIP	330PF	10%	50V
C234	1-163-003-11	CERAMIC CHIP	330PF	10%	50V
C235	1-126-964-11	ELECT	10MF	20%	50V
C236	1-126-964-11	ELECT	10MF	20%	50V
C240	1-107-823-11	CERAMIC CHIP	0.47MF	10%	16V
C242	1-164-346-11	CERAMIC CHIP	1MF		16V
C243	1-164-346-11	CERAMIC CHIP	1MF		16V
C244	1-164-346-11	CERAMIC CHIP	1MF		16V
C245	1-164-346-11	CERAMIC CHIP	1MF		16V
C246	1-126-965-11	ELECT	22MF	20%	50V
C247	1-163-017-00	CERAMIC CHIP	0.0047MF	10%	50V
C300	1-126-934-11	ELECT	220MF	20%	16V
C301	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C302	1-163-035-00	CERAMIC CHIP	0.047MF		50V
C303	1-126-965-11	ELECT	22MF	20%	50V
C304	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C305	1-124-257-00	ELECT	2.2MF	20%	50V
C306	1-136-164-00	FILM	0.082MF	5%	50V
C307	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C308	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C309	1-126-163-11	ELECT	4.7MF	20%	50V
C310	1-164-077-11	CERAMIC CHIP	0.1MF	10%	25V
C311	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V

The components identified by shading and marked ⚠ are critical for safety.
Replace only with the part number specified.

A and M

REF.NO.	PART NO.	DESCRIPTION		REMARK
C312	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C313	1-163-137-00	CERAMIC CHIP 680PF	5%	50V
C314	1-164-004-11	CERAMIC CHIP 0.1MF	10%	25V
C315	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C317	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C319	1-163-077-00	CERAMIC CHIP 0.1MF		50V
C320	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C321	1-126-963-11	ELECT 4.7MF	20%	50V
C322	1-163-101-00	CERAMIC CHIP 22PF	5%	50V
C323	1-163-099-00	CERAMIC CHIP 18PF	5%	50V
C324	1-163-119-00	CERAMIC CHIP 120PF	5%	50V
C325	1-163-017-00	CERAMIC CHIP 0.0047MF	10%	50V
C326	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C327	1-163-005-11	CERAMIC CHIP 470PF	10%	50V
C328	1-163-035-00	CERAMIC CHIP 0.047MF		50V
C329	1-163-016-00	CERAMIC CHIP 0.0039MF	10%	50V
C330	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C332	1-126-965-11	ELECT 22MF	20%	50V
C333	1-126-965-11	ELECT 22MF	20%	50V
C341	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V
C345	1-163-133-00	CERAMIC CHIP 470PF	5%	50V
C347	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V
C353	1-163-125-00	CERAMIC CHIP 220PF	5%	50V
C354	1-163-259-71	CERAMIC CHIP 220PF	5%	50V
C359	1-126-965-11	ELECT 22MF	20%	50V
C360	1-163-017-00	CERAMIC CHIP 0.0047MF	10%	50V
C365	1-163-059-91	CERAMIC CHIP 0.01MF	10%	50V
C401	1-126-967-11	ELECT 47MF	20%	16V
C402	1-163-009-11	CERAMIC CHIP 0.001MF	10%	50V
C403	1-164-346-11	CERAMIC CHIP 1MF		16V
C404	1-164-346-11	CERAMIC CHIP 1MF		16V
C405	1-163-009-11	CERAMIC CHIP 0.001MF	10%	50V
C406	1-163-009-11	CERAMIC CHIP 0.001MF	10%	50V
C408	1-163-117-00	CERAMIC 100PF	5%	50V
C409	1-163-117-00	CERAMIC 100PF	5%	50V
C410	1-126-967-11	ELECT 47MF	20%	16V
C411	1-137-372-11	FILM 0.022MF	5%	50V
C412	1-137-372-11	FILM 0.022MF	5%	50V
C413	1-163-009-11	CERAMIC CHIP 0.001MF	10%	50V
C415	1-163-009-11	CERAMIC CHIP 0.001MF	10%	50V
C416	1-126-965-11	ELECT 22MF	20%	50V
C417	1-126-965-11	ELECT 22MF	20%	50V
C418	1-163-009-11	CERAMIC CHIP 0.001MF	10%	50V
C419	1-164-346-11	CERAMIC CHIP 1MF		16V
C420	1-164-346-11	CERAMIC CHIP 1MF		16V
C421	1-164-337-11	CERAMIC CHIP 2.2MF		16V
C422	1-164-337-11	CERAMIC CHIP 2.2MF		16V
C423	1-164-337-11	CERAMIC CHIP 2.2MF		16V
C500	1-130-489-00	FILM 0.033MF	5%	50V
C502	1-163-077-00	CERAMIC CHIP 0.1MF		50V
C503	1-126-952-11	ELECT 1000MF	20%	35V
C504	1-126-968-11	ELECT 100MF	20%	50V
C505	1-126-941-11	ELECT 470MF	20%	25V
C506	1-163-009-11	CERAMIC CHIP 0.001MF	10%	50V
C507	1-126-965-11	ELECT 22MF	20%	50V
C508	1-130-785-11	MYLAR 0.47MF	10%	100V
C510	1-163-009-11	CERAMIC CHIP 0.001MF	10%	50V
C511	1-164-004-11	CERAMIC CHIP 0.1MF	10%	25V
C512	1-124-903-11	ELECT 1MF	20%	50V
C601 ⚠	1-136-516-12	FILM 0.1MF	20%	300V
C602 ⚠	1-136-516-12	FILM 0.1MF	20%	300V
C603 ⚠	1-113-890-61	ELECT 0.0022MF	20%	250V
C604 ⚠	1-113-890-61	ELECT 0.0022MF	20%	250V
C605 ⚠	1-161-964-91	CERAMIC 0.0047MF		250V
C606 ⚠	1-161-964-91	CERAMIC 0.0047MF		250V
C609	1-102-228-00	CERAMIC 470PF	10%	500V
C610	1-104-665-11	ELECT 100MF	20%	25V
C611	1-136-538-11	FILM 0.001MF	3%	2KV
C612	1-107-929-11	ELECT 10MF	20%	100V
C613	1-162-318-11	CERAMIC 0.001MF	10%	500V
C614	1-104-666-11	ELECT 220MF	20%	25V
C615	1-124-347-00	ELECT 100MF	20%	160V
C616	1-162-116-00	CERAMIC 680PF	10%	2KV
C617	1-107-929-11	ELECT 10MF	20%	100V
C618	1-102-228-00	CERAMIC 470PF	10%	500V
C619	1-126-942-61	ELECT 1000MF	20%	25V
C620	1-126-941-11	ELECT 470MF	20%	25V
C621	1-163-017-00	CERAMIC CHIP 0.0047MF	10%	50V
C622	1-126-965-11	ELECT 22MF	20%	50V
C623	1-104-666-11	ELECT 220MF	20%	25V
C624	1-163-017-00	CERAMIC CHIP 0.0047MF	10%	50V
C625	1-126-967-11	ELECT 47MF	20%	50V
C626	1-102-228-00	CERAMIC 470PF	10%	500V
C627	1-111-097-11	ELECT 0.0022F	20%	35V
C628	1-126-964-11	ELECT 10MF	20%	50V
C629	1-124-455-00	ELECT 100MF	20%	16V
C630	1-113-473-11	ELECT(BLOCK) 180MF	20%	400V
C632	1-106-220-00	FILM 0.1MF	10%	100V
C633	1-163-017-00	CERAMIC CHIP 0.0047MF	10%	50V
C634	1-104-665-11	ELECT 100MF	20%	25V
C635	1-111-097-11	ELECT 0.0022F	20%	35V
C636	1-102-228-00	CERAMIC 470PF	10%	500V
C638	1-163-009-11	CERAMIC CHIP 0.001MF	10%	50V
C639	1-102-228-00	CERAMIC 470PF	10%	500V
C640	1-102-110-00	CERAMIC 220PF	10%	50V
C641	1-104-797-11	ELECT 0.47MF	20%	100V
C645	1-104-665-11	ELECT 100MF	20%	25V
C800	1-126-772-11	ELECT 1MF	20%	250V
C801	1-129-722-00	FILM 0.047MF	10%	630V
C802	1-117-213-11	FILM XXXXMF	X%	XKV
C803	1-136-111-00	FILM 0.47MF	20%	50V
C804	1-124-902-00	ELECT 0.47MF	20%	50V
C805	1-102-228-00	CERAMIC 470PF	10%	500V
C806	1-102-244-00	CERAMIC 220PF	10%	500V
C807	1-107-651-11	ELECT 4.7MF	20%	250V
C809	1-161-754-00	CERAMIC 0.001MF	10%	2KV
C810	1-129-702-00	FILM 0.001MF	10%	400V
C812	1-163-259-00	CERAMIC CHIP 220PF	5%	50V
C813	1-162-134-11	CERAMIC 470PF	10%	2KV
C814	1-124-907-11	ELECT 10MF	20%	50V
C815	1-162-116-00	CERAMIC 680PF	10%	2KV
C816	1-162-114-00	CERAMIC 0.0047MF		2KV
C817	1-136-559-11	MYLAR 0.0047MF	10%	400V
C818	1-136-540-11	FILM 0.82MF	5%	200V
C819	1-162-318-11	CERAMIC 0.001MF	10%	500V
C820	1-126-951-11	ELECT 470MF	20%	35V
C821	1-102-114-00	CERAMIC 470PF	10%	50V
C822	1-104-696-11	FILM 0.015MF	10%	100V
C823	1-106-375-12	MYLAR 0.022MF	10%	250V
C824	1-106-367-00	MYLAR 0.01MF	10%	400V

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Replace only with the part number specified.

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REF.NO.	PART NO.	DESCRIPTION		REMARK
C827	1-164-182-11	CERAMIC CHIP 0.0033MF	10%	50V
C828	1-111-104-11	ELECT 2.2MF	20%	50V
C830	1-136-207-11	FILM 0.047MF	10%	250V
C832	1-124-902-00	ELECT 0.47MF	20%	50V
C833	1-163-077-00	CERAMIC CHIP 0.1MF		50V
C1001	1-163-017-00	CERAMIC CHIP 0.0047MF	10%	50V
C1002	1-126-395-11	ELECT 22MF	20%	16V
C1003	1-163-017-00	CERAMIC CHIP 0.0047MF	10%	50V
C1004	1-126-395-11	ELECT 22MF	20%	16V
C1005	1-164-492-11	CERAMIC CHIP 0.15MF	10%	16V
C1006	1-163-078-11	CERAMIC CHIP 0.033MF	10%	25V
C1007	1-163-078-11	CERAMIC CHIP 0.033MF	10%	25V
C1008	1-163-109-00	CERAMIC CHIP 47PF	5%	50V
C1009	1-163-109-00	CERAMIC CHIP 47PF	5%	50V
C1010	1-163-009-11	CERAMIC CHIP 0.001MF	10%	50V
C1011	1-164-004-11	CERAMIC CHIP 0.1MF	10%	25V
C1012	1-163-105-00	CERAMIC CHIP 33PF	5%	50V
C1013	1-126-206-11	ELECT 100MF	20%	6.3V
C1014	1-163-105-00	CERAMIC CHIP 33PF	5%	50V
C1015	1-164-505-11	CERAMIC CHIP 2.2MF		16V
C1016	1-164-004-11	CERAMIC CHIP 0.1MF	10%	25V
C1017	1-164-004-11	CERAMIC CHIP 0.1MF	10%	25V
C1200	1-136-165-00	FILM 0.1MF	5%	50V
C1201	1-136-173-00	FILM 0.47MF	5%	50V
C1202	1-136-173-00	FILM 0.47MF	5%	50V
C1203	1-136-169-00	FILM 0.22MF	5%	50V
C1204	1-136-169-00	FILM 0.22MF	5%	50V
C1205	1-101-004-00	CERAMIC 0.01MF		50V
C1206	1-101-004-00	CERAMIC 0.01MF		50V
C1215	1-136-173-00	FILM 0.47MF	5%	50V
C1216	1-137-366-11	FILM 0.0022MF	5%	50V
C1217	1-137-366-11	FILM 0.0022MF	5%	50V
		< VIBRATOR >		
CF1001	1-767-120-21	VIBRATOR, CERAMIC (8MHz)		
		< CONNECTOR >		
CN001	*1-568-880-51	PIN, CONNECTOR 5P		
CN081	*1-568-881-51	PIN, CONNECTOR 6P		
CN082	*1-568-880-51	PIN, CONNECTOR 5P		
CN083	1-695-915-11	TAB (CONTACT)		
CN201	*1-568-879-11	PIN, CONNECTOR 4P		
CN601 ⚠	*1-580-844-11	PIN, CONNECTOR (POWER)		
CN602 ⚠	1-508-786-00	PIN, CONNECTOR (5MM PITCH) 2P		
CN603 ⚠	1-508-765-00	PIN, CONNECTOR (5MM PITCH) 3P		
CN604	1-695-915-11	TAB (CONTACT)		
CN801	*1-580-798-11	CONNECTOR PIN (DY) 6P		
CN802	1-568-878-51	PIN, CONNECTOR 3P		
		< DIODE >		
D001	8-719-057-56	DIODE LS5360HL		
D002	8-719-982-27	DIODE MTZJ-33C		
D003	8-719-991-33	DIODE 1SS133T-77		
D004	8-719-991-33	DIODE 1SS133T-77		
D005	8-719-914-43	DIODE DAN202K		
D006	8-719-914-43	DIODE DAN202K		
D007	8-719-914-43	DIODE DAN202K		
D009	8-719-976-99	DIODE DTZ5.1B		
D011	8-719-976-99	DIODE DTZ5.1B		
D015	8-719-914-44	DIODE DAP202K		

REF.NO.	PART NO.	DESCRIPTION	REMARK
D201	8-719-976-99	DIODE DTZ5.1B	
D301	8-719-991-33	DIODE 1SS133T-77	
D302	8-719-991-33	DIODE 1SS133T-77	
D306	8-719-976-99	DIODE DTZ5.1B	
D401	8-719-109-97	DIODE RD6.8ES-B2	
D402	8-719-109-97	DIODE RD6.8ES-B2	
D403	8-719-109-97	DIODE RD6.8ES-B2	
D404	8-719-109-97	DIODE RD6.8ES-B2	
D405	8-719-109-97	DIODE RD6.8ES-B2	
D406	8-719-109-97	DIODE RD6.8ES-B2	
D407	8-719-109-97	DIODE RD6.8ES-B2	
D408	8-719-110-14	DIODE RD9.1ES-B3	
D409	8-719-110-14	DIODE RD9.1ES-B3	
D410	8-719-110-14	DIODE RD9.1ES-B3	
D411	8-719-991-33	DIODE 1SS133T-77	
D412	8-719-109-97	DIODE RD6.8ES-B2	
D415	8-719-110-14	DIODE RD9.1ES-B3	
D416	8-719-977-22	DIODE DTZ9.1	
D417	8-719-977-22	DIODE DTZ9.1	
D501	8-719-302-43	DIODE EL1Z	
D602	8-719-991-33	DIODE 1SS133T-77	
D603	8-719-109-97	DIODE RD6.8ES-B2	
D604	8-719-302-43	DIODE EL1Z	
D605	8-719-302-43	DIODE EL1Z	
D606	8-719-980-78	DIODE ERA83-006	
D607	8-719-046-78	DIODE EG-1Z-V1	
D608	8-719-302-43	DIODE EL1Z	
D609	8-719-312-10	DIODE RU4AM-T3	
D610	8-719-025-88	DIODE GBU4JL-6088	
D611	8-719-980-78	DIODE ERA83-006	
D612	8-719-046-76	DIODE RU-3YX-V1	
D613	8-719-058-38	DIODE FMN-G12S	
D614	8-719-109-89	DIODE RD5.6ESB2	
D615	8-719-302-43	DIODE EL1Z	
D616	8-719-921-54	DIODE MTZJ-6.2B	
D617	8-719-991-33	DIODE 1SS133T-77	
D619	8-719-980-78	DIODE ERA83-006	
D620	8-719-110-14	DIODE RD9.1ES-B3	
D621	8-719-058-38	DIODE FMN-G12S	
D622	8-719-991-33	DIODE 1SS133T-77	
D625	8-719-991-33	DIODE 1SS133T-77	
D626	8-719-302-43	DIODE EL1Z	
D627	8-719-991-33	DIODE 1SS133T-77	
D801	8-719-950-57	DIODE BYD33G	
D802	8-719-302-43	DIODE EL1Z	
D803	8-719-945-80	DIODE ERC06-15S	
D804	8-719-028-72	DIODE RGP02-17EL-6433	
D805	8-719-928-08	DIODE ERD28-08S	
D806	8-719-302-43	DIODE EL1Z	
D807	8-719-991-33	DIODE 1SS133T-77	
D809	8-719-302-43	DIODE EL1Z	
D810	8-719-908-03	DIODE GP08D	
D811	8-719-908-03	DIODE GP08D	
D1200	8-719-109-72	DIODE RD3.9ES-B2	
		< FUSE >	
F601 ⚠	1-532-504-41	FUSE (4A 250V)	
⚠	*1-533-725-11	HOLDER, FUSE : F601	

The components identified by shading and marked ⚠ are critical for safety.
Replace only with the part number specified.

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REF.NO.	PART NO.	DESCRIPTION	REMARK
		< FERRITE BEAD >	
FB600	1-410-397-21	FERRITE BEAD INDUCTOR 1.1UH	
FB601	1-410-397-21	FERRITE BEAD INDUCTOR 1.1UH	
FB602	1-412-911-11	INDUCTOR, FERRITE BEAD 1.1UH	
FB603	1-410-396-41	FERRITE BEAD INDUCTOR 0.45UH	
FB605	1-412-911-11	INDUCTOR, FERRITE BEAD 1.1H	
FB606	1-412-911-11	INDUCTOR, FERRITE BEAD 1.1H	
FB607	1-412-911-11	INDUCTOR, FERRITE BEAD 1.1H	
FB1001	1-410-397-21	FERRITE BEAD INDUCTOR 1.1UH	
FB1002	1-410-397-21	FERRITE BEAD INDUCTOR 1.1UH	
FB1003	1-410-397-21	FERRITE BEAD INDUCTOR 1.1UH	
		< ENCAPSULATED FILTER >	
FL201	1-239-803-11	FILTER, EMI	
		< IC >	
IC003	8-747-014-00	RAY CATCHER ELEMENT SBX1981-51	
IC004	8-759-250-69	IC TEA2124	
IC005	8-759-510-54	IC PST572D	
IC200	8-759-429-97	IC MSP3400C-PP-C6 (KV-25R1A/25R1D/25R1K/25R1R)	
	8-759-429-98	IC MSP3410B-PP-F7 (KV-25R1E)	
IC201	8-759-502-21	IC TDA2822M	
IC301	8-759-333-45	IC MC44002P	
IC302	8-759-333-46	IC MC44140P	
IC401	8-759-064-91	IC NJM2233BL	
IC501	8-759-192-71	IC STV9379	
	4-202-373-01	SPRING, IC ; IC501	
IC600	8-749-924-99	IC STR-S6707	
IC601	8-749-010-68	IC PC123F2	
	4-202-373-01	SPRING, IC ; IC601	
IC602	8-749-920-61	IC SE-135N	
IC603	8-759-507-29	IC LM7808CT	
IC604	8-759-250-63	IC TL750L05CLPR	
IC605	8-759-510-52	IC TEA7605	
	4-202-373-01	SPRING, IC ; IC605	
IC1002	8-759-440-72	IC SDA5250M-C9-GEG	
IC1003	8-759-432-32	IC ST24W04FM6TR	
IC1004	8-759-440-74	IC M27C512-90C1-BE5-1	
IC1200	8-759-250-68	IC TDA7264	
	4-202-373-01	SPRING, IC ; IC1200	
	4-202-710-11	SPACER, INSULATING ; IC1200	
		< SOCKET >	
J401	1-561-534-00	SOCKET PIN 21P	
J402	1-778-670-11	JACK, PIN 3P	
J900	1-764-606-11	JACK	
		< COIL >	
L002	1-410-200-31	INDUCTOR CHIP 4.7UH	
L108	1-412-522-41	INDUCTOR 5.6UH	
L111	1-408-408-00	INDUCTOR 8.2UH	
L112	1-408-397-00	INDUCTOR 1UH	
L113	1-408-408-00	INDUCTOR 8.2UH	
L203	1-410-385-11	INDUCTOR CHIP 22UH	
L204	1-410-385-11	INDUCTOR CHIP 22UH	
L301	1-410-200-31	INDUCTOR CHIP 4.7UH	
L302	1-408-607-31	INDUCTOR 22UH	
L401	1-408-409-00	INDUCTOR 10UH	
L402	1-408-409-00	INDUCTOR 10UH	
L403	1-408-409-00	INDUCTOR 10UH	
L404	1-408-409-00	INDUCTOR 10UH	
L409	1-408-409-00	INDUCTOR 10UH	
L609	1-412-533-21	INDUCTOR 47UH	
L611	1-412-533-21	INDUCTOR 47UH	
L612	1-412-522-41	INDUCTOR 5.6UH	
L613	1-412-522-41	INDUCTOR 5.6UH	
L800	1-406-675-11	COIL, CHOKE 4.7MMH	
L801	1-420-872-00	COIL, AIR-CORE	
L803	1-421-794-21	TRANSFORMER, FERRITE (PMT)	
L804	1-459-111-00	COIL, DRAM CORE (CDI)	
L806	1-411-335-11	COIL, HORIZONTAL LINEARITY	
L809	1-459-104-00	COIL, WITH CORE	
L1001	1-408-405-00	INDUCTOR 4.7UH	
		< IC LINK >	
PS600	1-532-686-21	LINK, IC 2.7A (ICP-F75)	
PS601	1-532-686-21	LINK, IC 2.7A (ICP-F75)	
PS602	1-532-686-21	LINK, IC 2.7A (ICP-F75)	
PS603	1-532-686-21	LINK, IC 2.7A (ICP-F75)	
		< TRANSISTOR >	
Q002	8-729-920-74	TRANSISTOR 2SC2412K-QR	
Q006	8-729-216-22	TRANSISTOR 2SA1162-G	
Q007	8-729-920-74	TRANSISTOR 2SC2412K-QR	
Q008	8-729-920-74	TRANSISTOR 2SC2412K-QR	
Q009	8-729-920-74	TRANSISTOR 2SC2412K-QR	
Q011	8-729-027-59	TRANSISTOR DTC144EKA-T146	
Q012	8-729-920-74	TRANSISTOR 2SC2412K-QR	
Q013	8-729-920-74	TRANSISTOR 2SC2412K-QR	
Q014	8-729-920-74	TRANSISTOR 2SC2412K-QR	
Q015	8-729-920-74	TRANSISTOR 2SC2412K-QR	
Q107	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q110	8-729-920-74	TRANSISTOR 2SC2412K-QR	
Q118	8-729-920-74	TRANSISTOR 2SC2412K-QR	
Q200	8-729-900-53	TRANSISTOR DTC114EK	
Q201	8-729-027-56	TRANSISTOR DTC143TKA-T146	
Q202	8-729-027-56	TRANSISTOR DTC143TKA-T146	
Q204	8-729-920-74	TRANSISTOR 2SC2412K-QR	
Q205	8-729-920-74	TRANSISTOR 2SC2412K-QR	
Q210	8-729-920-74	TRANSISTOR 2SC2412K-QR	
Q300	8-729-920-74	TRANSISTOR 2SC2412K-QR	
Q301	8-729-900-53	TRANSISTOR DTC114EK	
Q302	8-729-900-53	TRANSISTOR DTC114EK	
Q303	8-729-900-53	TRANSISTOR DTC114EK	
Q304	8-729-900-53	TRANSISTOR DTC114EK	
Q305	8-729-900-53	TRANSISTOR DTC114EK	
Q306	8-729-900-53	TRANSISTOR DTC114EK	
Q310	8-729-920-74	TRANSISTOR 2SC2412K-QR	
Q311	8-729-920-74	TRANSISTOR 2SC2412K-QR	
Q312	8-729-920-74	TRANSISTOR 2SC2412K-QR	
Q402	8-729-920-74	TRANSISTOR 2SC2412K-QR	
Q403	8-729-920-74	TRANSISTOR 2SC2412K-QR	
Q404	8-729-920-74	TRANSISTOR 2SC2412K-QR	
Q405	8-729-920-74	TRANSISTOR 2SC2412K-QR	
Q406	8-729-920-74	TRANSISTOR 2SC2412K-QR	
Q407	8-729-920-74	TRANSISTOR 2SC2412K-QR	
Q408	8-729-920-74	TRANSISTOR 2SC2412K-QR	
Q500	8-729-017-06	TRANSISTOR 2SC4793	
Q501	8-729-920-74	TRANSISTOR 2SC2412K-QR	
Q601	8-729-025-04	TRANSISTOR 2SC3852A	

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REF.NO.	PART NO.	DESCRIPTION	REMARK
Q602	8-729-320-28	TRANSISTOR 2SA1667	
Q603	8-729-027-08	TRANSISTOR 2SC2389STP-R	
Q604	8-729-024-35	TRANSISTOR 2SC2808STP-R	
Q606	8-729-029-56	TRANSISTOR DTA144ESA	
Q608	8-729-027-59	TRANSISTOR DTC144EKA-T146	
Q617	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q801	8-729-140-50	TRANSISTOR 2SC3209LK	
Q802	8-729-033-85	TRANSISTOR S2000N-16E305A	
	4-382-854-11	SCREW (M3X10), P, SW (+) ; Q802	
Q803	8-729-027-59	TRANSISTOR DTC144EKA-T146	
Q804	8-729-209-15	TRANSISTOR 2SD2012	
Q805	8-729-255-12	TRANSISTOR 2SC2551-O	
Q1200	8-729-920-74	TRANSISTOR 2SC2412K-QR	
Q1201	8-729-920-74	TRANSISTOR 2SC2412K-QR	

< RESISTOR >

JR17	1-216-295-00	METAL GLAZE	0	5%	1/10W
JR43	1-216-295-00	METAL GLAZE	0	5%	1/10W
JR45	1-216-295-00	METAL GLAZE	0	5%	1/10W
JR47	1-216-295-00	METAL GLAZE	0	5%	1/10W
JR51	1-216-295-00	METAL GLAZE	0	5%	1/10W
JR52	1-216-295-00	METAL GLAZE	0	5%	1/10W
JR55	1-216-295-00	METAL GLAZE	0	5%	1/10W
JR56	1-216-295-00	METAL GLAZE	0	5%	1/10W
JR57	1-216-295-00	METAL GLAZE	0	5%	1/10W
JR59	1-216-295-00	METAL GLAZE	0	5%	1/10W
JR60	1-216-295-00	METAL GLAZE	0	5%	1/10W
JR61	1-216-295-00	METAL GLAZE	0	5%	1/10W
JR62	1-216-295-00	METAL GLAZE	0	5%	1/10W
JR66	1-216-295-00	METAL GLAZE	0	5%	1/10W
JR69	1-216-295-00	METAL GLAZE	0	5%	1/10W
JR003	1-216-295-00	METAL GLAZE	0	5%	1/10W
JR004	1-216-295-00	METAL GLAZE	0	5%	1/10W
JR006	1-216-295-00	METAL GLAZE	0	5%	1/10W
JR007	1-216-295-00	METAL GLAZE	0	5%	1/10W
JR008	1-216-295-00	METAL GLAZE	0	5%	1/10W
JR009	1-216-296-00	METAL GLAZE	0	5%	1/8W
JR010	1-216-296-00	METAL GLAZE	0	5%	1/8W
JR011	1-216-296-00	METAL GLAZE	0	5%	1/8W
JR012	1-216-296-00	METAL GLAZE	0	5%	1/8W
JR013	1-216-295-00	METAL GLAZE	0	5%	1/10W
JR015	1-216-296-00	METAL GLAZE	0	5%	1/8W
JR016	1-216-295-00	METAL GLAZE	0	5%	1/10W
JR018	1-216-296-00	METAL GLAZE	0	5%	1/8W
JR019	1-216-296-00	METAL GLAZE	0	5%	1/8W
JR020	1-216-296-00	METAL GLAZE	0	5%	1/8W
JR021	1-216-296-00	METAL GLAZE	0	5%	1/8W
JR022	1-216-296-00	METAL GLAZE	0	5%	1/8W
JR023	1-216-295-00	METAL GLAZE	0	5%	1/10W
JR024	1-216-295-00	METAL GLAZE	0	5%	1/10W
JR025	1-216-296-00	METAL GLAZE	0	5%	1/8W
JR026	1-216-296-00	METAL GLAZE	0	5%	1/8W
JR028	1-216-296-00	METAL GLAZE	0	5%	1/8W
JR029	1-216-296-00	METAL GLAZE	0	5%	1/8W
JR030	1-216-296-00	METAL GLAZE	0	5%	1/8W
JR033	1-216-295-00	METAL GLAZE	0	5%	1/10W
JR034	1-216-296-00	METAL GLAZE	0	5%	1/8W
JR036	1-216-296-00	METAL GLAZE	0	5%	1/8W
JR038	1-216-295-00	METAL GLAZE	0	5%	1/10W
JR039	1-216-295-00	METAL GLAZE	0	5%	1/10W
JR046	1-216-296-00	METAL GLAZE	0	5%	1/8W
JR069	1-216-295-00	METAL GLAZE	0	5%	1/10W
JR071	1-216-296-00	METAL GLAZE	0	5%	1/8W
JR072	1-216-295-00	METAL GLAZE	0	5%	1/10W
JR1001	1-216-295-00	METAL GLAZE	0	5%	1/10W
JR1002	1-216-295-00	METAL GLAZE	0	5%	1/10W
R001	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W
R005	1-216-295-00	METAL GLAZE	0	5%	1/10W
R010	1-216-031-00	METAL GLAZE	180	5%	1/10W
R012	1-249-437-00	CARBON	47K	5%	1/10W
R013	1-216-069-00	METAL GLAZE	6.8K	5%	1/10W
R014	1-216-071-00	METAL GLAZE	8.2K	5%	1/10W
R015	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R017	1-216-097-00	METAL GLAZE	100K	5%	1/10W
R018	1-216-025-00	METAL GLAZE	100	5%	1/10W
R019	1-216-067-00	METAL GLAZE	5.6K	5%	1/10W
R020	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W
R021	1-216-262-00	METAL GLAZE	470K	5%	1/8W
R022	1-216-238-91	METAL GLAZE	47K	5%	1/8W
R023	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W
R025	1-216-091-00	METAL GLAZE	56K	5%	1/10W
R026	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W
R027	1-216-069-00	METAL GLAZE	6.8K	5%	1/10W
R028	1-216-025-00	METAL GLAZE	100	5%	1/10W
R029	1-216-039-00	METAL GLAZE	390	5%	1/10W
R030	1-215-900-11	METAL OXIDE	22K	5%	2W F
R031	1-216-295-00	METAL GLAZE	0	5%	1/10W
R032	1-216-295-00	METAL GLAZE	0	5%	1/10W
R034	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R036	1-216-295-00	METAL GLAZE	0	5%	1/10W
R037	1-216-093-00	METAL GLAZE	68K	5%	1/10W
R038	1-216-295-00	METAL GLAZE	0	5%	1/10W
R040	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R041	1-216-238-91	METAL GLAZE	47K	5%	1/8W
R044	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R045	1-216-081-00	METAL GLAZE	22K	5%	1/10W
R046	1-216-254-00	METAL GLAZE	220K	5%	1/8W
R047	1-216-075-00	METAL GLAZE	12K	5%	1/10W
R049	1-216-041-71	METAL GLAZE	470	5%	1/10W
R050	1-216-089-00	METAL GLAZE	47K	5%	1/10W
R051	1-216-174-00	METAL GLAZE	100	5%	1/8W
R052	1-216-073-00	CARBON	10K	5%	1/10W
R053	1-216-057-00	CARBON	2.2K	5%	1/10W
R060	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W
R061	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R062	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R063	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W
R064	1-216-222-00	METAL GLAZE	10K	5%	1/8W
R065	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R066	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R067	1-216-081-00	METAL GLAZE	22K	5%	1/10W
R068	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R069	1-216-081-00	METAL GLAZE	22K	5%	1/10W
R070	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R075	1-216-045-00	METAL GLAZE	680	5%	1/10W
R076	1-216-089-00	METAL GLAZE	47K	5%	1/10W
R078	1-216-071-00	METAL GLAZE	8.2K	5%	1/10W
R088	1-216-017-00	METAL GLAZE	47	5%	1/10W
R089	1-216-027-00	METAL GLAZE	120	5%	1/10W
R090	1-216-033-91	METAL GLAZE	220	5%	1/10W

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REF.NO.	PART NO.	DESCRIPTION				REMARK
R097	1-216-051-00	METAL GLAZE	1.2K	5%	1/10W	
R098	1-216-051-00	METAL GLAZE	1.2K	5%	1/10W	
R099	1-216-200-11	METAL GLAZE	1.2K	5%	1/8W	
R110	1-216-174-00	METAL GLAZE	100	5%	1/8W	
R111	1-216-174-00	METAL GLAZE	100	5%	1/8W	
R112	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R113	1-216-113-71	METAL GLAZE	470K	5%	1/10W	
R114	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R115	1-216-190-00	METAL GLAZE	470	5%	1/8W	
R116	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R117	1-216-222-00	METAL GLAZE	10K	5%	1/8W	
R118	1-216-069-00	METAL GLAZE	6.8K	5%	1/10W	
R119	1-216-031-00	METAL GLAZE	180	5%	1/10W	
R120	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R124	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R125	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R126	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R134	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R163	1-216-029-00	METAL GLAZE	150	5%	1/10W	
R174	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R200	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R201	1-249-389-11	CARBON	4.7	5%	1/4W	F
R202	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R203	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R204	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R205	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R207	1-249-389-11	CARBON	4.7	5%	1/4W	F
R209	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R210	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R211	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R213	1-216-174-00	METAL GLAZE	100	5%	1/8W	
R214	1-216-174-00	METAL GLAZE	100	5%	1/8W	
R215	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R225	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R226	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R227	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R236	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R237	1-216-093-00	METAL GLAZE	68K	5%	1/10W	
R238	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R239	1-216-093-00	METAL GLAZE	68K	5%	1/10W	
R240	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R301	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R302	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R303	1-216-090-00	METAL GLAZE	51K	5%	1/10W	
R304	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R305	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R306	1-216-113-71	METAL GLAZE	470K	5%	1/10W	
R307	1-216-121-71	METAL GLAZE	1M	5%	1/10W	
R308	1-216-085-00	METAL GLAZE	33K	5%	1/10W	
R309	1-216-121-71	METAL GLAZE	1M	5%	1/10W	
R310	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R311	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R312	1-216-097-00	METAL GLAZE	100	5%	1/10W	
R313	1-216-045-00	METAL GLAZE	680	5%	1/10W	
R314	1-216-045-00	METAL GLAZE	680	5%	1/10W	
R315	1-216-045-00	METAL GLAZE	680	5%	1/10W	
R316	1-216-033-71	METAL GLAZE	220	5%	1/10W	
R317	1-216-033-71	METAL GLAZE	220	5%	1/10W	
R318	1-216-019-00	METAL GLAZE	56	5%	1/10W	
R322	1-216-022-00	METAL GLAZE	75	5%	1/10W	
R323	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R324	1-216-123-11	METAL GLAZE	1.2M	5%	1/10W	
R325	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R327	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R328	1-216-077-00	METAL GLAZE	15K	5%	1/10W	
R332	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R333	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R334	1-216-033-71	METAL GLAZE	220	5%	1/10W	
R335	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R336	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R337	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R339	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R340	1-216-250-00	METAL GLAZE	150K	5%	1/8W	
R341	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R342	1-216-186-00	METAL GLAZE	330	5%	1/8W	
R343	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R344	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R345	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R351	1-216-292-11	METAL GLAZE	8.2M	5%	1/8W	
R354	1-216-033-00	METAL GLAZE	220	5%	1/10W	
R360	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R361	1-216-022-00	METAL GLAZE	75	5%	1/10W	
R362	1-216-022-00	METAL GLAZE	75	5%	1/10W	
R363	1-216-022-00	METAL GLAZE	75	5%	1/10W	
R364	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R365	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R366	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R367	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R368	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R369	1-216-238-91	METAL GLAZE	47K	5%	1/8W	
R401	1-216-041-71	METAL GLAZE	470	5%	1/10W	
R402	1-247-807-31	CARBON	100	5%	1/4W	
R403	1-247-807-31	CARBON	100	5%	1/4W	
R404	1-216-022-00	METAL GLAZE	75	5%	1/10W	
R405	1-216-113-71	METAL GLAZE	470K	5%	1/10W	
R406	1-216-091-00	METAL GLAZE	56K	5%	1/10W	
R407	1-216-095-00	METAL GLAZE	82K	5%	1/10W	
R408	1-216-095-00	METAL GLAZE	82K	5%	1/10W	
R409	1-216-095-00	METAL GLAZE	82K	5%	1/10W	
R410	1-216-171-00	METAL GLAZE	75	5%	1/8W	
R411	1-216-091-00	METAL GLAZE	56K	5%	1/10W	
R412	1-216-041-71	METAL GLAZE	470	5%	1/10W	
R413	1-216-113-71	METAL GLAZE	470K	5%	1/10W	
R414	1-260-311-11	CARBON	39	5%	1/2W	
R415	1-260-311-11	CARBON	39	5%	1/2W	
R416	1-216-022-00	METAL GLAZE	75	5%	1/10W	
R417	1-216-174-00	METAL GLAZE	100	5%	1/8W	
R418	1-216-113-00	METAL GLAZE	470K	5%	1/10W	
R419	1-216-113-00	METAL GLAZE	470K	5%	1/10W	
R420	1-247-807-31	CARBON	100	5%	1/4W	
R421	1-247-807-31	CARBON	100	5%	1/4W	
R422	1-216-093-00	METAL GLAZE	68K	5%	1/10W	
R423	1-216-093-00	METAL GLAZE	68K	5%	1/10W	
R424	1-216-093-00	METAL GLAZE	68K	5%	1/10W	
R425	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R426	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R427	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R428	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W	
R429	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W	
R430	1-216-009-00	METAL GLAZE	22	5%	1/10W	

The components identified by shading and marked ⚠ are critical for safety.
Replace only with the part number specified.

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REF.NO.	PART NO.	DESCRIPTION				REMARK
R501	1-208-806-11	METAL CHIP	10K	0.50%	1/10W	
R502	1-216-677-11	METAL CHIP	12K	0.50%	1/10W	
R504	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R505	1-216-689-11	METAL GLAZE	39K	5%	1/10W	
R508	1-215-865-11	METAL OXIDE	220	5%	1W	F
R509	1-249-383-11	CARBON	1.5	5%	1/4W	F
R511	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R512	1-216-689-11	METAL GLAZE	39K	5%	1/10W	
R513	1-249-426-11	CARBON	5.6K	5%	1/4W	
R514	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R515	1-216-079-00	METAL GLAZE	18K	5%	1/10W	
⚠ R601	1-202-962-11	WIREWOUND	3.3	5%	10W	
R602	1-249-417-11	CARBON	1K	5%	1/4W	
R603	1-215-898-11	METAL OXIDE	10K	5%	2W	F
R604	1-215-902-11	METAL OXIDE	47K	5%	2W	F
R605	1-216-364-71	METAL OXIDE	0.39	5%	2W	F
R607	1-215-858-00	METAL OXIDE	15	5%	1W	F
R608	1-216-365-00	METAL OXIDE	0.47	5%	2W	F
R609	1-249-420-11	CARBON	1.8K	5%	1/4W	
R610	1-249-417-11	CARBON	1K	5%	1/4W	
R611	1-216-354-11	METAL OXIDE	2.7	5%	1W	F
⚠ R612	1-260-135-11	CARBON	1M	5%	1/2W	
R613	1-249-417-11	CARBON	1K	5%	1/4W	
⚠ R614	1-218-265-11	METAL	8.2M	5%	1W	
R615	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R616	1-215-479-00	METAL	270K	1%	1/4W	
R617	1-215-877-11	METAL OXIDE	22K	5%	1W	F
R618	1-247-863-91	CARBON	22K	5%	1/4W	
R619	1-249-424-11	CARBON	3.9K	5%	1/4W	
R620	1-247-895-91	CARBON	470K	5%	1/4W	
R621	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R622	1-249-437-11	CARBON	47K	5%	1/4W	
R623	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R628	1-249-417-11	CARBON	1K	5%	1/4W	F
R632	1-247-807-31	CARBON	100	5%	1/4W	
R634	1-249-397-11	CARBON	22	5%	1/4W	F
R635	1-249-437-11	CARBON	47K	5%	1/4W	
R636	1-249-417-11	CARBON	1K	5%	1/4W	
R637	1-247-815-91	CARBON	220	5%	1/4W	
R638	1-247-863-91	CARBON	22K	5%	1/4W	
R639	1-249-429-11	CARBON	10K	5%	1/4W	
R645	1-249-422-11	CARBON	2.7K	5%	1/4W	
R646	1-249-382-11	CARBON	1.2	5%	1/4W	F
R647	1-202-933-61	FUSIBLE	0.1	10%	1/2W	F
R648	1-249-407-11	CARBON	150	5%	1/4W	
R651	1-215-902-11	METAL OXIDE	47K	5%	2W	F
R800	1-215-909-11	METAL OXIDE	47	5%	3W	F
R801	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R802	1-216-174-00	METAL GLAZE	100	5%	1/8W	
R803	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R804	1-215-917-11	METAL	1K	5%	3W	F
R805	1-215-897-11	METAL OXIDE	6.8K	5%	2W	F
R806	1-216-345-00	METAL OXIDE	0.47	5%	1W	F
R807	1-249-403-11	CARBON	68	5%	1/4W	
R808	1-202-813-00	SOLID	22K	5%	1/2W	
R809	1-215-911-11	METAL OXIDE	100	5%	3W	F
R810	1-247-895-91	CARBON	470K	5%	1/4W	
R811	1-216-455-11	METAL OXIDE	560	5%	2W	F
R812	1-215-869-11	METAL OXIDE	1K	5%	1W	F
R813	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R814	1-217-811-11	FUSIBLE	0.47	5%	1/4W	
R815	1-216-097-91	METAL GLAZE	100	5%	1/10W	
R816	1-216-366-00	METAL OXIDE	0.56	5%	2W	F
R818	1-202-813-00	SOLID	22K	5%	1/2W	
R819	1-249-441-11	CARBON	100K	5%	1/4W	
R820	1-217-820-11	FUSIBLE	3.3K	5%	1/4W	
R821	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R822	1-216-097-91	METAL GLAZE	100	5%	1/10W	
R824	1-216-129-00	METAL GLAZE	2.2M	5%	1/10W	
R825	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R826	1-216-296-00	METAL GLAZE	0	5%	1/8W	
R827	1-216-093-00	METAL GLAZE	68K	5%	1/10W	
R828	1-216-109-00	METAL GLAZE	330K	5%	1/10W	
R829	1-216-359-00	METAL OXIDE	6.8	5%	1W	F
R830	1-216-093-00	METAL GLAZE	68K	5%	1/10W	
R831	1-216-091-00	METAL GLAZE	56K	5%	1/10W	
R832	1-216-107-00	METAL GLAZE	270K	5%	1/10W	
R835	1-215-882-00	METAL OXIDE	22	5%	2W	F
R841	1-249-377-11	CARBON	0.47	5%	1/4W	F
R842	1-249-377-11	CARBON	0.47	5%	1/4W	F
R1001	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R1002	1-216-095-00	METAL GLAZE	82K	5%	1/10W	
R1003	1-216-071-00	METAL GLAZE	8.2K	5%	1/10W	
R1004	1-216-069-00	METAL GLAZE	6.8K	5%	1/10W	
R1005	1-216-069-00	METAL GLAZE	6.8K	5%	1/10W	
R1006	1-216-129-00	METAL GLAZE	2.2M	5%	1/10W	
R1009	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R1010	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R1011	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R1012	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R1013	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R1014	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R1015	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R1016	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R1017	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R1019	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R1020	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R1021	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R1022	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R1023	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R1024	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R1025	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R1026	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R1027	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R1028	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R1029	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R1030	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R1031	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R1032	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R1033	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R1034	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R1035	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R1036	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R1037	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R1038	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R1039	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R1040	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R1041	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R1042	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R1043	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	

The components identified by shading and marked ⚠ are critical for safety.
Replace only with the part number specified.

A and M | M

REF.NO.	PART NO.	DESCRIPTION			REMARK
R1200	1-216-206-00	METAL GLAZE	2.2K	5%	1/8W
R1201	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W
R1202	1-216-081-00	METAL GLAZE	22K	5%	1/10W
R1203	1-216-069-00	METAL GLAZE	6.8K	5%	1/10W
R1208	1-212-849-00	FUSIBLE	4.7	5%	1/4W F
R1209	1-212-849-00	FUSIBLE	4.7	5%	1/4W F
R1211	1-249-424-11	CARBON	3.9K	5%	1/4W
R1212	1-249-424-11	CARBON	3.9K	5%	1/4W
		< RELAY >			
RY600 ⚠	1-755-018-11	RELAY			
		< SWITCH >			
S001	1-571-532-21	SWITCH, TACTIL			
S002	1-571-532-21	SWITCH, TACTIL			
S003	1-571-532-21	SWITCH, TACTIL			
S004	1-571-532-21	SWITCH, TACTIL			
S005	1-571-532-21	SWITCH, TACTIL			
S006	1-571-532-21	SWITCH, TACTIL			
S601 ⚠	1-571-433-21	SWITCH, PUSH (AC POWER)			
		< TRANSFORMER >			
T601 ⚠	1-427-962-21	TRANSFORMER, LINE FILTER			
T602 ⚠	1-429-840-11	TRANSFORMER, CONVERTER			
T801	1-437-090-31	HDT			
T802 ⚠	1-453-220-11	TRANSFORMER ASSY, FLYBACK			(MX-1670/U2B4)
		< THERMISTOR >			
THP601 ⚠	1-809-827-11	THERMISTOR, POSITIVE			
		< TUNER >			
TU101	1-693-338-11	TUNER (TUVIF) (AEP)			
		< CRYSTAL >			
X201	1-760-628-11	VIBRATOR, CRYSTAL (18.432MHz)			
X301	1-760-907-21	VIBRATOR, CRYSTAL (14.318MHz)			
X302	1-760-710-21	VIBRATOR, CRYSTAL (17.472MHz)			
**********					
	*A-1634-042-A	M BOARD, COMPLETE			
		**********			
	1-750-797-11	SOCKET, PLCC			
		< CAPACITOR >			
C1001	1-163-017-00	CERAMIC CHIP	0.0047MF	10%	50V
C1002	1-126-395-11	ELECT	22MF	20%	16V
C1003	1-163-017-00	CERAMIC CHIP	0.0047MF	10%	50V
C1004	1-126-395-11	ELECT	22MF	20%	16V
C1005	1-164-492-11	CERAMIC CHIP	0.15MF	10%	16V
C1006	1-163-078-11	CERAMIC CHIP	0.033MF	10%	25V
C1007	1-163-078-11	CERAMIC CHIP	0.033MF	10%	25V
C1008	1-163-109-00	CERAMIC CHIP	47PF	5%	50V
C1009	1-163-109-00	CERAMIC CHIP	47PF	5%	50V
C1010	1-163-009-11	CERAMIC CHIP	0.001MF	10%	50V
C1011	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C1012	1-163-105-00	CERAMIC CHIP	33PF	5%	50V
C1013	1-126-206-11	ELECT	100MF	20%	6.3V
C1014	1-163-105-00	CERAMIC CHIP	33PF	5%	50V
C1015	1-164-505-11	CERAMIC CHIP	2.2MF		16V
C1016	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C1017	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
		< VIBRATOR >			
CF1001	1-767-120-21	VIBRATOR, CERAMIC (8MHz)			
		< FERRITE BEAD >			
FB1001	1-410-397-21	FERRITE BEAD INDUCTOR 1.1UH			
FB1002	1-410-397-21	FERRITE BEAD INDUCTOR 1.1UH			
FB1003	1-410-397-21	FERRITE BEAD INDUCTOR 1.1UH			
		< IC >			
IC1002	8-759-440-72	IC SDA5250M-C9-GEG			
IC1003	8-759-432-32	IC ST24W04FM6TR			
IC1004	8-759-440-74	IC M27C512-90C1-BE5-1			
		< COIL >			
L1001	1-408-405-00	INDUCTOR	4.7UH		
		< RESISTOR >			
JR1001	1-216-295-00	METAL GLAZE	0	5%	1/10W
JR1002	1-216-295-00	METAL GLAZE	0	5%	1/10W
R1001	1-216-025-00	METAL GLAZE	100	5%	1/10W
R1002	1-216-095-00	METAL GLAZE	82K	5%	1/10W
R1003	1-216-071-00	METAL GLAZE	8.2K	5%	1/10W
R1004	1-216-069-00	METAL GLAZE	6.8K	5%	1/10W
R1005	1-216-069-00	METAL GLAZE	6.8K	5%	1/10W
R1006	1-216-129-00	METAL GLAZE	2.2M	5%	1/10W
R1009	1-216-025-00	METAL GLAZE	100	5%	1/10W
R1010	1-216-025-00	METAL GLAZE	100	5%	1/10W
R1011	1-216-025-00	METAL GLAZE	100	5%	1/10W
R1012	1-216-025-00	METAL GLAZE	100	5%	1/10W
R1013	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W
R1014	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W
R1015	1-216-025-00	METAL GLAZE	100	5%	1/10W
R1016	1-216-025-00	METAL GLAZE	100	5%	1/10W
R1017	1-216-025-00	METAL GLAZE	100	5%	1/10W
R1019	1-216-025-00	METAL GLAZE	100	5%	1/10W
R1020	1-216-025-00	METAL GLAZE	100	5%	1/10W
R1021	1-216-025-00	METAL GLAZE	100	5%	1/10W
R1022	1-216-025-00	METAL GLAZE	100	5%	1/10W
R1023	1-216-025-00	METAL GLAZE	100	5%	1/10W
R1024	1-216-025-00	METAL GLAZE	100	5%	1/10W
R1025	1-216-025-00	METAL GLAZE	100	5%	1/10W
R1026	1-216-025-00	METAL GLAZE	100	5%	1/10W
R1027	1-216-025-00	METAL GLAZE	100	5%	1/10W
R1028	1-216-025-00	METAL GLAZE	100	5%	1/10W
R1029	1-216-025-00	METAL GLAZE	100	5%	1/10W
R1030	1-216-025-00	METAL GLAZE	100	5%	1/10W
R1031	1-216-025-00	METAL GLAZE	100	5%	1/10W
R1032	1-216-025-00	METAL GLAZE	100	5%	1/10W
R1033	1-216-025-00	METAL GLAZE	100	5%	1/10W
R1034	1-216-025-00	METAL GLAZE	100	5%	1/10W
R1035	1-216-025-00	METAL GLAZE	100	5%	1/10W
R1036	1-216-025-00	METAL GLAZE	100	5%	1/10W
R1037	1-216-025-00	METAL GLAZE	100	5%	1/10W
R1038	1-216-025-00	METAL GLAZE	100	5%	1/10W

The components identified by shading and marked ⚠ are critical for safety.
Replace only with the part number specified.

M C

REF.NO.	PART NO.	DESCRIPTION			REMARK
R1039	1-216-025-00	METAL GLAZE	100	5%	1/10W
R1040	1-216-025-00	METAL GLAZE	100	5%	1/10W
R1041	1-216-025-00	METAL GLAZE	100	5%	1/10W
R1042	1-216-025-00	METAL GLAZE	100	5%	1/10W
R1043	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W

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*A-1638-094-A C BOARD, COMPLETE
****

< CAPACITOR >

C701	1-102-117-00	CERAMIC	820PF	10%	50V
C702	1-102-117-00	CERAMIC	820PF	10%	50V
C703	1-102-117-00	CERAMIC	820PF	10%	50V
C704	1-102-824-00	CERAMIC	470PF	5%	50V
C705	1-102-824-00	CERAMIC	470PF	5%	50V
C706	1-102-824-00	CERAMIC	470PF	5%	50V
C707	1-107-651-11	ELECT	4.7MF	20%	250V
C709	1-162-114-00	CERAMIC	0.0047MF		2KV
C710	1-126-967-11	ELECT	47MF	20%	16V
C711	1-101-880-00	CERAMIC	47PF	5%	50V
C712	1-102-117-00	CERAMIC	820PF	10%	50V
C713	1-101-880-00	CERAMIC	47PF	5%	50V

< CONNECTOR >

CNC71	*1-568-881-51	PIN, CONNECTOR 6P
CNC72	*1-568-880-51	PIN, CONNECTOR 5P
CNC73	1-695-915-21	TAB (CONTACT)
CNC76	1-695-915-21	TAB (CONTACT)

< DIODE >

D701	8-719-991-33	DIODE 1SS133T-77
D702	8-719-991-33	DIODE 1SS133T-77
D703	8-719-991-33	DIODE 1SS133T-77
D704	8-719-991-33	DIODE 1SS133T-77
D705	8-719-991-33	DIODE 1SS133T-77
D706	8-719-991-33	DIODE 1SS133T-77
D707	8-719-991-33	DIODE 1SS133T-77
D708	8-719-991-33	DIODE 1SS133T-77
D709	8-719-991-33	DIODE 1SS133T-77
D716	8-719-991-33	DIODE 1SS133T-77
D717	8-719-054-81	DIODE 1SS292T-77
D718	8-719-991-33	DIODE 1SS133T-77
D719	8-719-054-81	DIODE 1SS292T-77
D723	8-719-991-33	DIODE 1SS133T-77
D724	8-719-054-81	DIODE 1SS292T-77

< CRT SOCKET >

J701	⚠ 1-526-990-22	SOCKET, CRT

< INDUCTOR >

L702	1-408-425-00	INDUCTOR 220UH

< TRANSISTOR >

Q701	8-729-119-78	TRANSISTOR 2SC2785-HFE
Q702	8-729-119-78	TRANSISTOR 2SC2785-HFE
Q703	8-729-119-78	TRANSISTOR 2SC2785-HFE
Q704	8-729-906-70	TRANSISTOR BF871-127
Q705	8-729-906-70	TRANSISTOR BF871-127
Q706	8-729-906-70	TRANSISTOR BF871-127
Q707	8-729-200-17	TRANSISTOR 2SA1091-O
Q708	8-729-200-17	TRANSISTOR 2SA1091-O
Q709	8-729-200-17	TRANSISTOR 2SA1091-O

< RESISTOR >

R700	1-202-549-00	SOLID	100	20%	1/2W
R701	1-249-417-11	CARBON	1K	5%	1/4W
R702	1-249-417-11	CARBON	1K	5%	1/4W
R707	1-249-393-11	CARBON	10	5%	1/4W
R708	1-247-815-91	CARBON	220	5%	1/4W
R709	1-247-815-91	CARBON	220	5%	1/4W
R710	1-247-815-91	CARBON	220	5%	1/4W
R711	1-249-417-11	CARBON	1K	5%	1/4W
R714	1-249-417-11	CARBON	1K	5%	1/4W
R715	1-249-417-11	CARBON	1K	5%	1/4W
R716	1-249-417-11	CARBON	1K	5%	1/4W
R717	1-260-105-11	CARBON	3.3K	5%	1/2W
R718	1-260-105-11	CARBON	3.3K	5%	1/2W
R719	1-260-105-11	CARBON	3.3K	5%	1/2W
R720	1-215-923-00	METAL OXIDE	10K	5%	3W F
R721	1-215-923-00	METAL OXIDE	10K	5%	3W F
R722	1-215-923-00	METAL OXIDE	10K	5%	3W F
R724	1-202-844-00	SOLID	330K	20%	1/2W
R725	1-202-848-00	SOLID	680K	10%	1/2W
R729	1-216-355-11	METAL OXIDE	3.3	5%	1W F
R730	1-249-410-11	CARBON	270	5%	1/4W
R732	1-247-815-91	CARBON	220	5%	1/4W
R734	1-247-815-91	CARBON	220	5%	1/4W
R735	1-247-815-91	CARBON	220	5%	1/4W
R736	1-247-815-91	CARBON	220	5%	1/4W
R744	1-260-103-11	CARBON	2.2K	5%	1/2W
R745	1-260-103-11	CARBON	2.2K	5%	1/2W
R746	1-260-103-11	CARBON	2.2K	5%	1/2W

< VARIABLE RESISTOR >

RV701	1-230-640-11	RES, ADJ, METAL FILM 2.2M
RV702	1-241-656-21	RES, ADJ, METAL GLAZE 110M

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The components identified by shading and marked ! are critical for safety.
Replace only with the part number specified.

REF.NO.	PART NO.	DESCRIPTION	REMARK
		MISCELLANEOUS	
		*************	
!	1-406-806-21	COIL, DEGAUSSING	
	1-452-032-00	MAGNET, DISC; 10MM Ø	
	1-452-094-00	MAGNET, ROTATABLE DISK; 15MM Ø	
!	1-458-220-11	TRANSFORMER ASSY, FLYBACK	
			(NX-1670/U2B4)
	1-503-258-21	SPEAKER	
!	1-540-006-22	CAP ASSY, HIGH-VOLTAGE	
!	1-571-433-21	SWITCH, PUSH (AC POWER)	
!	1-765-286-11	CORD, POWER	
	1-693-338-11	TUNER (TUVIF) (AEP)	
!	8-733-254-05	PICTURE TUBE (SD-257) (M60LCS60X)	
!	8-451-404-21	DEFLECTION YOKE (Y25-GXABA)	
		ACCESSORIES AND PACKING MATERIALS	
		**********	
	*4-042-476-01	BAG, PROTECTION	
	*4-203-267-01	INDIVIDUAL CARTON	
	*4-203-268-01	CUSHION (UPPER) (ASSY)	
	*4-203-271-01	CUSHION (LOWER) (ASSY)	
	4-203-574-41	MANUAL, INSTRUCTION (KV-25R1A)(ITALIAN)	
	4-203-574-11	MANUAL, INSTRUCTION (KV-25R1D) (GERMAN/ENGLISH/DUTCH/ITALIAN/FRENCH/ GREEK/TURKISH)	
	4-203-574-71	MANUAL, INSTRUCTION (KV-25R1E)(SPANISH)	
	4-203-574-81	MANUAL, INSTRUCTION (KV-25R1E)	(PORTUGUESE)
	4-203-574-91	MANUAL, INSTRUCTION (KV-25R1K/25R1R)	
		REMOTE COMMANDER	
		**********	
	1-473-194-11	COMMANDER, STANDARD TYPE (RM-836)	